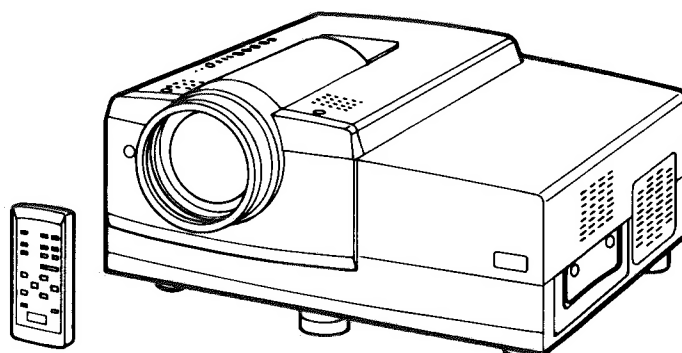


# JVC

## SERVICE MANUAL

### D-ILA PROJECTOR

## DLA-G10E DLA-G10EK



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# SPECIFICATIONS

## ■ GENERAL

<b>Type</b>	D-ILA PROJECTOR
<b>Dimensions (W × H × D)</b>	42.5 cm × 24.6 cm × 37.5 cm (W : excludes protruding parts)
<b>Mass</b>	14.8kg
<b>Power requirements</b>	AC 220V – 240V 50/60Hz
<b>Power Consumption</b>	4A (200VAC) [Stand-by mode : 7W]
<b>Operating temperature</b>	+5°C – +35°C
<b>Operating humidity</b>	20% – 80% (no-condensation)
<b>Storage temperature</b>	-10°C – +60°C
<b>Storage humidity</b>	20% – 80% (no-condensation)
<b>Remote control unit operation</b>	<b>RM-M10G</b> Distance : 10m Angle: Horizontal = ±50°, Vertical = ±15°
<b>Mass</b>	90g (includes dry cell battery)
<b>Accessories</b>	Remote control unit (RM-M10G) × 1 Dry cell battery (size : UM-4/AAA/R03) × 2 PC Cable (D-sub 3-row 15pin : 2m) × 1 Signal adapter (for Macintosh) × 1 Audio cable(φ 3.5mm stereo : 3m) × 1 AV cable (RCA pin plug : 1.5m) × 1 BNC-RCA plug adapter × 1 Power code (3-pin : 2.5m) × 1

## ■ OPTICS

<b>Image projection system</b>	3 D-ILA devices · 1 Lens · 3 primary-color shutters system
<b>D-ILA device</b>	0.9-inch(2.3cm) [H1365 × V1024 pixels] × 3 * measured diagonally
<b>Projection lens</b>	[Total : 4,193,280 pixels] 1.5 × electrical zoom lens [50% fix shift]
<b>Screen size</b>	42-inch(107cm) [tele:min.] – 300-inch(762cm) [recommended] – 521-inch(1323cm) [wide:max.] * measured diagonally with aspect ratio 4:3
<b>Projection distance</b>	2.5m – 20m
<b>Light lamp</b>	Xenon lamp 400W
<b>Projection angle</b>	Vertical : max. +7° Horizontal : max. 3° (±1.5°)

## ■ ELECTRIC

<b>Color system</b>	NTSC3.58 / NTSC4.43 / PAL / SECAM (Automatic / Manual)
<b>Resolution</b>	<b>Video input (4:3)</b> : horizontal 1000TV lines <b>RGB input</b> : H1365 × V1024 dots (S-XGA full resolution)
<b>Contrast ratio</b>	250 : 1
<b>Scanning frequency</b>	Horizontal : 15kHz – 82kHz Vertical : 50Hz – 78Hz
<b>Audio power output</b>	1W + 1W (8Ω) : stereo
<b>Speakers</b>	6 × 3cm 8Ω oval type × 2
<b>Fuse</b>	△QMF51D2-6R3J1 (6A)

## ■ INPUT CONNECTORS

<b>AV IN</b>	select VIDEO · Y/C · Y/Pb(B-Y)/PR(R-Y)
<b>VIDEO</b>	Composite video signal BNC connector × 1 1Vp-p 75Ω negative sync.
<b>Y / C</b>	Luminance/Chroma separate video signal mini DIN 4-pin × 1 Y : 1Vp-p 75Ω negative sync. C : 0.286Vp-p(burst) 75Ω [NTSC] 0.3Vp-p(burst) 75Ω [PAL]
<b>Y · Pb/B-Y · PR/R-Y</b>	Hi-vision base-band signal / Color-differential component signal BNC connector × 3 Y 1Vp-p 75Ω 3-value sync. / negative sync. Pb / B-Y ±0.35Vp-p 75Ω / 0.7Vp-p 75Ω PR / R-Y ±0.35Vp-p 75Ω / 0.7Vp-p 75Ω
<b>AUDIO</b>	RCA pin jack × 2 (L[mono] / R) 500mVrms high impedance (over 47kΩ)
<b>COMPUTER</b>	select COMPUTER IN-1 / 2
<b>COMPUTER IN-1</b>	<b>PC</b> Analog RGB signal mini D-sub 15-pin × 1 R : 0.7Vp-p 75Ω positive G : 0.7Vp-p 75Ω positive B : 0.7Vp-p 75Ω positive Sync. on G : 1Vp-p 75Ω negative Sync. : 3 – 5Vp-p high impedance * Sync. mode : automatic selection
<b>AUDIO</b>	φ 3.5mm stereo mini-jack × 1 500mVrms high impedance (over 47kΩ)
<b>COMPUTER IN-2</b>	Analog RGB signal / Hi-vision base-band (RGB) signal / Color-differential component signal / External sync. signal BNC connector × 5 R 0.7Vp-p 75Ω positive G 0.7Vp-p(no sync.) 75Ω positive B 0.7Vp-p 75Ω positive Sync. on G 1Vp-p 75Ω negative H / Cs (HD) 3 – 5Vp-p high impedance positive/negative V (VD) 3 – 5Vp-p high impedance positive/negative * Sync. mode : automatic selection
<b>AUDIO</b>	φ 3.5mm stereo mini-jack × 1 500mVrms high impedance (over 47kΩ)

## ■ OUTPUT CONNECTORS

<b>COMPUTER OUT</b>	Analog RGB signal mini D-sub 15-pin × 1 R : 0.7Vp-p 75Ω G : 0.7Vp-p 75Ω B : 0.7Vp-p 75Ω Sync. : TTL level positive / negative * COMPUTER line output (same for input)
<b>AUDIO OUT</b>	φ 3.5mm stereo mini-jack × 1 0–500mVrms high impedance (over 47kΩ) * Audio line output : variable output (connecting = muting speaker output)

## ■ CONTROL CONNECTORS

<b>RS-232C</b>	D-sub 9-pin × 1
<b>REMOTE</b>	φ 3.5mm mini-jack × 1

Design & specification are subject to change without notice.

# SAFETY PRECAUTIONS [DLA-G10E]

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (Δ) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.
4. **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**  
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (L) side GND, the ISOLATED(NEUTRAL) : (Δ) side GND and EARTH : (⊕) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.  
If above note will not be kept, a fuse or any parts will be broken.
5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B1 POWER SUPPLY).
6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10kΩ 2W resistor to the anode button.
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

## 9. Isolation Check

### (Safety for Electrical Shock Hazard)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screw heads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

#### (1) Dielectric Strength Test

The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.

(... Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)

This method of test requires a test equipment not generally found in the service trade.

#### (2) Leakage Current Check

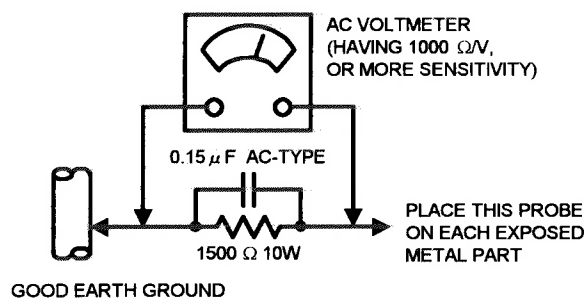
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).

However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

#### ● Alternate Check Method

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).

However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



# SAFETY PRECAUTIONS [DLA-G10EK]



1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessary be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (▲) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts List of Service Manual may cause shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubing□s, barriers and the like to be separated from live parts, high temperature parts, moving parts and / or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
















## WARNING

1. The equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

## ■ Warning and caution labels

Labels advising of warning and caution are affixed on and in various locations of the product. Take careful notice of these during service and inspection.

 <b>WARNING</b>	<b>Risk of lethal or otherwise serious personal injury.</b>
 <b>CAUTION</b>	<b>Risk of personal injury and damage to the product.</b>

Class	Pictorial	Label advisory	Location
 <b>WARNING</b>	Hot, breakable   	This projector lamp emits high heat and contains high-pressure during use. If touched, the lamp (bulb) may rupture and burns may result. Before attempting to replace the lamp, remove the power cord plug from the outlet and wait for the lamp (bulb) to cool (at least one hour). Then proceed to replace the lamp.	Bottom chassis
 <b>WARNING</b>	High voltage 	Never open any cover on the projector except the lamp and filter covers. Dangerous electrical voltage inside the projector.	Bottom chassis
 <b>CAUTION</b>	Hot, shock hazard 	Do not insert foreign objects into the ventilation holes as this can result in fire or electrical hazards. Do not block the ventilation holes as this may cause the internal temperature to rise and possibly result fire. When the inside of the unit requires cleaning, consult your nearest JVC dealer or service center.	Side of top cover
 <b>CAUTION</b>	High brightness 	Never look into the lens while the projector is on. There is danger of eye damage.	Top cover
 <b>CAUTION</b>	High voltage  	Turn off before opening this lamp cover. See user's manual for replacing the lamp. Replace with same type (DLA-G10-LAMP) lamp rated 400W, DC15.5V.	Bottom chassis
 <b>CAUTION</b>	Hot 	Caution, high temperature	Lamp assembly

## ■ Additional cautionary items

- ※ High voltage of about 35kV is applied for lighting the lamp. During adjustments and other work with the cover removed, extreme care is needed to avoid electric shock.
- ※ Use care to avoid touching the fan or safety switch terminals during work with the cover removed.
- ※ Select a stable, horizontal work site to prevent dropping the product and components.
- ※ Use the power cord and interface cable supplied with the product.

**Before starting work, be sure to also check the safety notices contained in the instruction manual.**

# SERVICE POLICY

The following service policy is being utilized.

Item	Part number	Service method
ANALOG PWB ASS'Y	SXA-1002A	Replace (module)
DPC PWB ASS'Y	SXA-1201A	Replace (module)
DD PWB ASS'Y	SXA-1301A	Replace (module)
R DRIVE PWB ASS'Y	SXA-3001A	Replace (module)
G DRIVE PWB ASS'Y	SXA-3101A	Replace (module)
B DRIVE PWB ASS'Y	SXA-3201A	Replace (module)
MAIN POWER PWB ASS'Y	SXA-9002B	Replace parts
LAMP POWER PWB ASS'Y	SXA-9102B	Replace parts
IGNITER PWB ASS'Y	SXA-9301B	Replace parts
FAN POWER PWB ASS'Y	SXA-9201B	Replace parts
MAIN LINE FILTER PWB ASS'Y	SXA-9502B	Replace parts
SUB LINE FILTER PWB ASS'Y	SXA-9512B	Replace parts
REMOTE CONTROL SENSOR PWB ASS'Y	SXA-8001A	Replace parts
STAND-BY MODULE	SXA-OP021B	Replace (module)
MAIN DRIVE MODULE	SXA-OP002B	Replace (module)
ACTIVE FILTER MODULE	SXA-OP003B	Replace (module)
OPTICAL BLOCK ASS'Y	DLA-G10-OPSA	Replace (module)
LAMP UNIT ASS'Y	G10-LAMP-SU	Replace (module)

# SPECIFIC SERVICE INSTRUCTIONS

## Installation cautions

### ■General

- The product contains 5 internal fans. There is risk of internal overheating if the fan intakes and exits are obstructed. In event the internal temperature increases excessively, a sensor functions to cut off the power. Therefore, when using the product, check that the fan intakes and exits are not blocked by dust and there is adequate free space around the unit to allow ample ventilation.
- Do not stand the unit on its side and avoid horizontal inclination of more than  $\pm 30$  degrees.

### ■Ceiling suspension

An optional ceiling bracket is available for bearing the weight of the product. Read the bracket instructions and perform work accordingly.

## Lamp

### ■ Important general cautions

- △ The xenon lamp emits high intensity white, ultraviolet and infrared light.  
Do not look directly at the light during service. Also, do not touch the lamp directly as it presents a burn hazard.
- △ The lamp is filled with high-pressure xenon gas. Use ample care when handling. Particularly avoid impacts to the sapphire glass.

### ■ Replacement cautions

After replacing the lamp, be sure to release the pressurized gas of the old lamp by the method described below and discard it according to local codes pertaining to industrial waste.

The lamp is comprised of the following materials.

Outer	: PC (outside), UP (inside), brass (insert nut)
Heat sink	: Aluminum, phosphor bronze (clip)
Lamp	: Ceramics (exterior) silver (reflecting mirror), sapphire glass, glass, tungsten (internal electrode), cobalt (external electrode), molybdenum (electrode supporter)
Others	: Iron (screws, net), brass (lamp assembly screws, electrode leads), polyslider (washers for lamp assembly screws), stainless steel (handle, glass securing springs), copper (Lamp assembly connecting electrodes)

### Releasing internal gas

The internal gas is released by cutting the glass bead at the rear of the lamp. Since this can fly off from the pressure and pose a hazard, protection is recommended to avoid injury.

### Procedure

1. Place the lamp assembly on a stable work surface (Fig. 1).
2. Set wire cutters in place to cut the bead, but do not cut yet (Fig. 2).
3. Cover the lamp and wire cutters with a cloth (Fig. 3).
4. Hold the cloth in place to prevent flying off from the pressure, and cut the bead (Fig. 4).
5. Inspect that the gas has been released (Fig. 5).

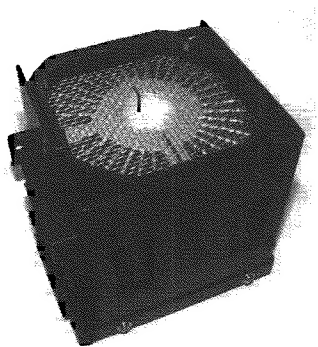


Fig. 1

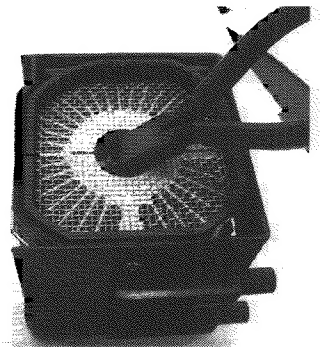


Fig. 2

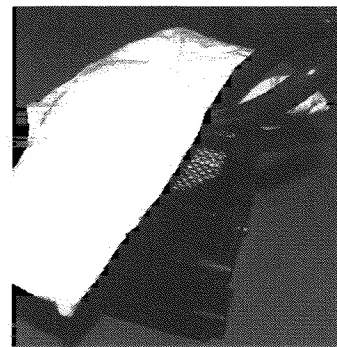


Fig. 3

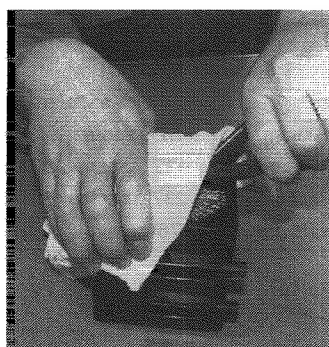


Fig. 4

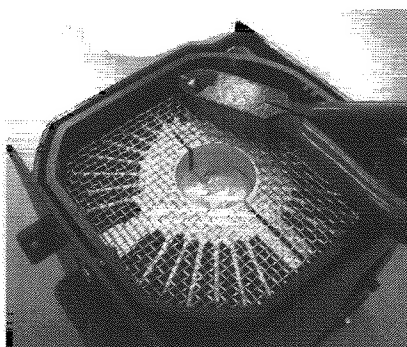
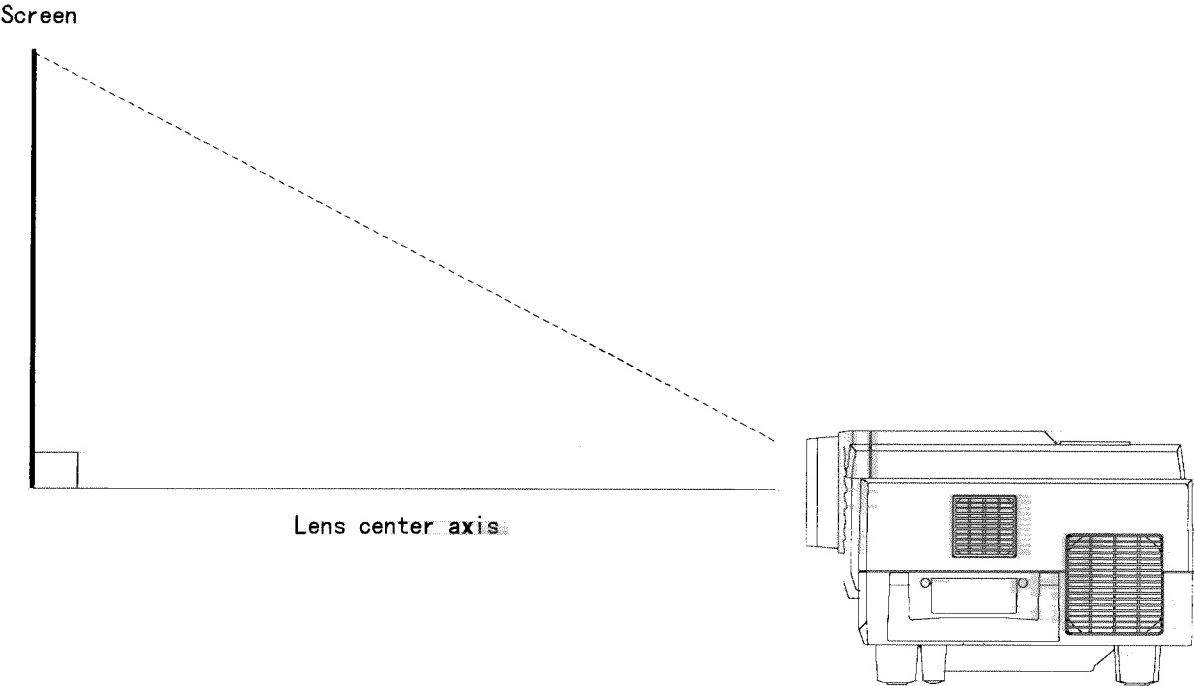


Fig. 5

## Projection distance and screen size

- Install the screen so that the bottom edge of the projected image is aligned with the lens center axis. During 4:3 projection, the bottom edge of the image is on this center axis. Also position the screen at right angles with the lens center axis (so that projection is perpendicular to the screen).
- The projection lens is an approximately 1.5× zoom. The maximum image size is about 1.5 times the minimum size.
- The usable projection distance (focus obtainable) is 2.5 to 20 meters. The screen size at maximum zoom (T) is 42 to 345 inches diagonal (4:3).
- If used at the maximum projection distance (20 m), it is recommended to use maximum zoom (T).
- If used at the minimum projection distance (2.5 m) and distortion occurs at the image perimeter, it is recommended to set the projection distance somewhat rearward.
- When setting the screen, use the 4:3 aspect ratio. (This provides a horizontal range reference for using the 16:9 ratio.)
- The diagonal screen size at 16:9 is about 91.8 % compared at 4:3. The numerical values are approximate and simply for reference.
- If there are direct lights from the sun or the illumination, it makes the image whiten. Screen the light with a curtain.
- Keystone distortion due to tilt cannot be compensated.
- The projection distance and screen size relationship is approximate and for reference only. Projection lens tolerances and other factors can affect the actual picture size.
- Use the special bracket for suspending the projector from a ceiling.



Projection distance	Projected picture size (diagonal)			
	4:3 aspect ratio		16:9 aspect ratio	
	Min. size	Max. size	Min. size	Max. size
2.5 m	42" (approx. 107 cm)	63" (approx. 160 cm)	39" (approx. 100 cm)	57" (approx. 145 cm)
5.0 m	86" (approx. 219 cm)	128" (approx. 325 cm)	79" (approx. 201 cm)	117" (approx. 297 cm)
10 m	172" (approx. 437 cm)	259" (approx. 657 cm)	158" (approx. 402 cm)	237" (approx. 601 cm)
20 m	345" (approx. 877 cm)	521" (approx. 1323 cm)	317" (approx. 806 cm)	478" (approx. 1214 cm)

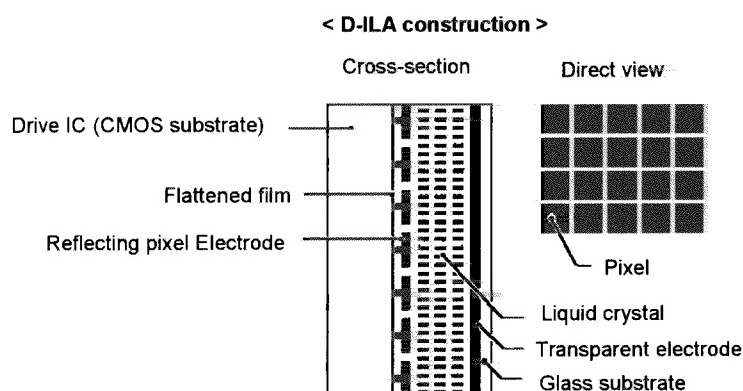
※ See also table on next page.



## Projection distance and image size relationship

Projection distance	Projected picture size (diagonal)			
	4:3 aspect ratio		16:9 aspect ratio	
	Min. size (max. tele)	Max. size (max. wide)	Min. size (max. tele)	Max. size (max. wide)
2.5m	42" (approx. 107cm)	63" (approx. 160cm)	39" (approx. 100cm)	57" (approx. 144cm)
3.0m	51" (approx. 130cm)	76" (approx. 193cm)	47" (approx. 120cm)	69" (approx. 175cm)
4.0m	68" (approx. 173cm)	102" (approx. 259cm)	63" (approx. 161cm)	93" (approx. 236cm)
5.0m	86" (approx. 219cm)	128" (approx. 325cm)	79" (approx. 201cm)	117" (approx. 297cm)
6.0m	103" (approx. 262cm)	154" (approx. 391cm)	95" (approx. 242cm)	140" (approx. 355cm)
7.0m	120" (approx. 305cm)	180" (approx. 457cm)	110" (approx. 280cm)	165" (approx. 419cm)
8.0m	138" (approx. 351cm)	207" (approx. 525cm)	126" (approx. 321cm)	189" (approx. 480cm)
9.0m	155" (approx. 394cm)	233" (approx. 591cm)	142" (approx. 361cm)	213" (approx. 541cm)
10.0m	172" (approx. 437cm)	259" (approx. 657cm)	158" (approx. 402cm)	237" (approx. 601cm)
11.0m	190" (approx. 483cm)	285" (approx. 723cm)	174" (approx. 442cm)	260" (approx. 660cm)
12.0m	207" (approx. 526cm)	310" (approx. 787cm)	190" (approx. 483cm)	286" (approx. 726cm)
13.0m	224" (approx. 569cm)	338" (approx. 858cm)	206" (approx. 524cm)	310" (approx. 787cm)
14.0m	242" (approx. 615cm)	364" (approx. 924cm)	222" (approx. 564cm)	334" (approx. 848cm)
15.0m	260" (approx. 661cm)	390" (approx. 990cm)	238" (approx. 605cm)	358" (approx. 909cm)
16.0m	276" (approx. 702cm)	416" (approx. 1056cm)	254" (approx. 646cm)	382" (approx. 970cm)
17.0m	294" (approx. 747cm)	443" (approx. 1125cm)	270" (approx. 686cm)	406" (approx. 1031cm)
18.0m	311" (approx. 790cm)	469" (approx. 1191cm)	285" (approx. 724cm)	430" (approx. 1092cm)
19.0m	328" (approx. 834cm)	495" (approx. 1257cm)	301" (approx. 765cm)	454" (approx. 1153cm)
20.0m	345" (approx. 877cm)	521" (approx. 1323cm)	317" (approx. 806cm)	478" (approx. 1214cm)

## D-ILA construction and properties



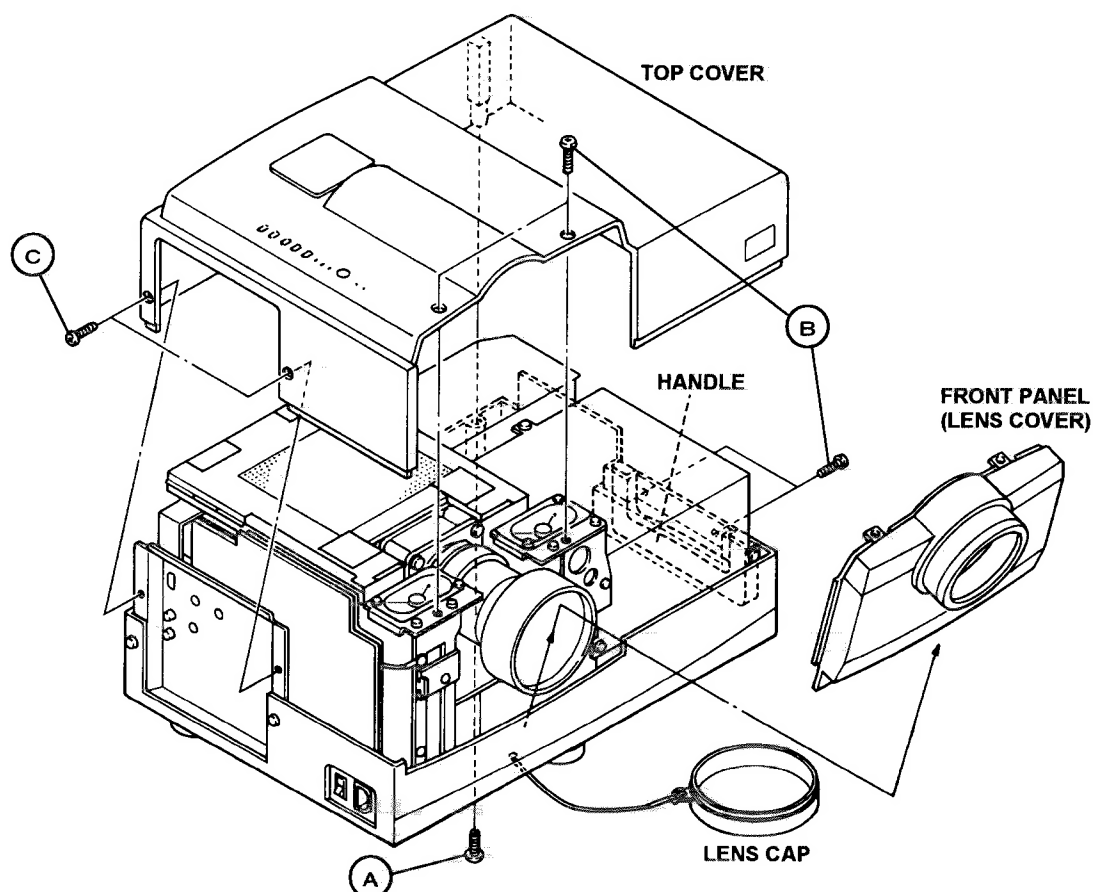
Item	Description
Resolution	Pixels: 1365 (H) × 1024 (V)
Contrast ratio	1000 : 1
Picture elements (pixels)	Pitch: Horizontal: 13.5 $\mu$ m, vertical: 13.5 $\mu$ m Aspect ratio: 4:3 Diagonal: 0.907 inch

- Aperture efficiency of reflecting type pixel is greater than 93 %.
- Vertical liquid crystal arrangement provided high 1000 : 1 contrast ratio

## DISASSEMBLY PROCEDURE

\* Confirm the power cord is unplugged from the AC outlet before proceeding.

\* The lamp remains quite hot after power off. Allow sufficient time to cool before starting work.



### ■ TOP COVER

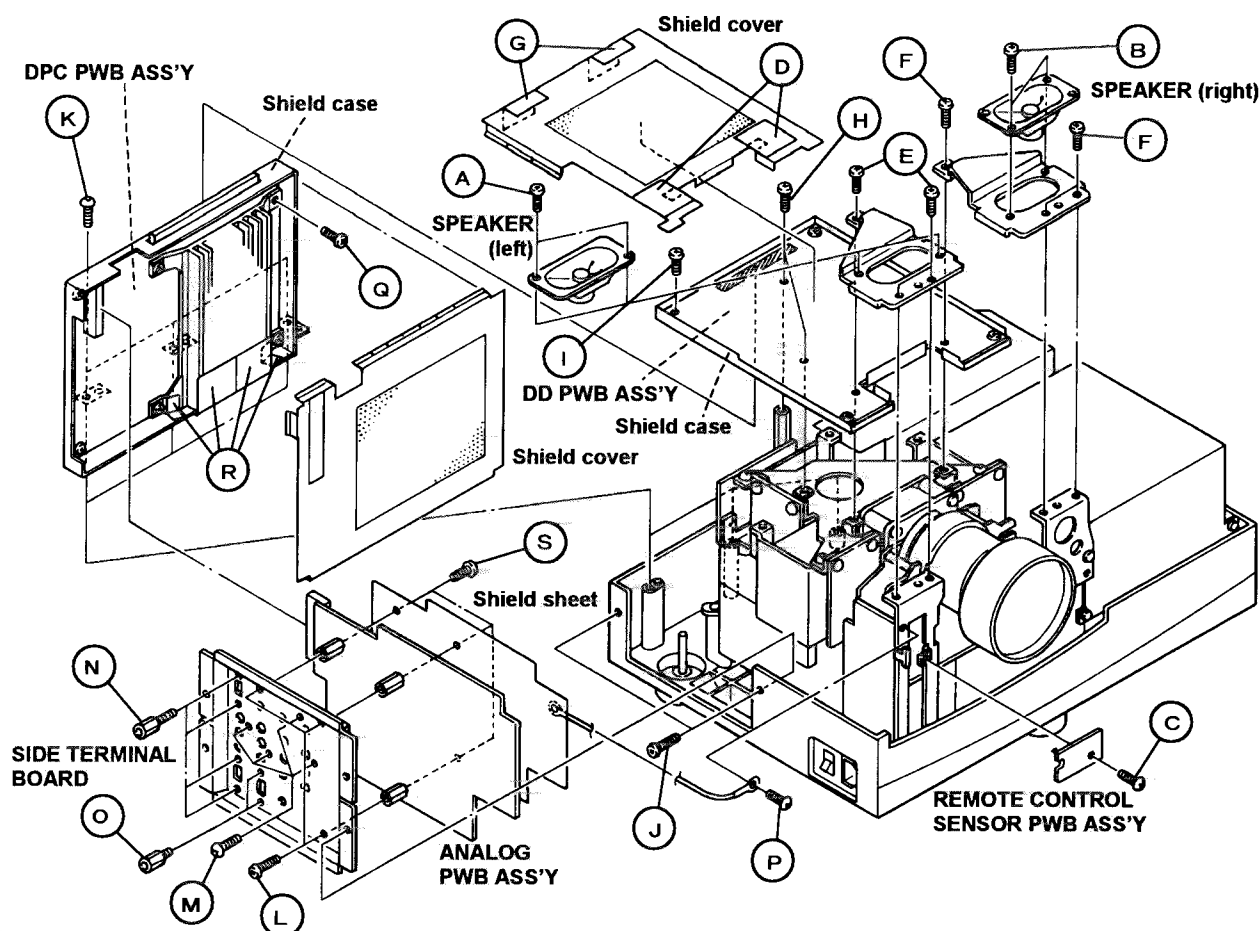
1. Remove 1 screw [A].
2. Remove 4 screws [B] and 2 screws [C].
3. Grasp left and right sides of the TOP COVER, raise and take out it.

### ■ FRONT PANEL (LENS COVER)

- Take out the TOP COVER.
  - 1. Tilt the FRONT COVER outward and raise it carefully to take out it.
- ※ Use care not to impart strong shock to the lens.

### ■ HANDLE

- Take out the TOP COVER.
  - 1. Raise and take out the HANDLE.
- ※ The handle shaft is easily dislodged, use care not to misplace it.



## ■ SPEAKERS

- Take out the TOP COVER.
- 1. Remove 2 screws (left :[A], right :[B]).
- 2. Disconnect the + and - wires (receptacles) from 2 locations and take out the SPEAKERS (left and right).

## ■ REMOTE CONTROL SENSOR PWB ASS'Y

- Take out the TOP COVER.
- Take out the FRONT PANEL.
- 1. Remove Take out 1 screw [C].
- 2. Disconnect connector J, shift the REMOTE CONTROL SENSOR PWB ASS'Y toward the right and take out it.

## ■ DD PWB ASS'Y

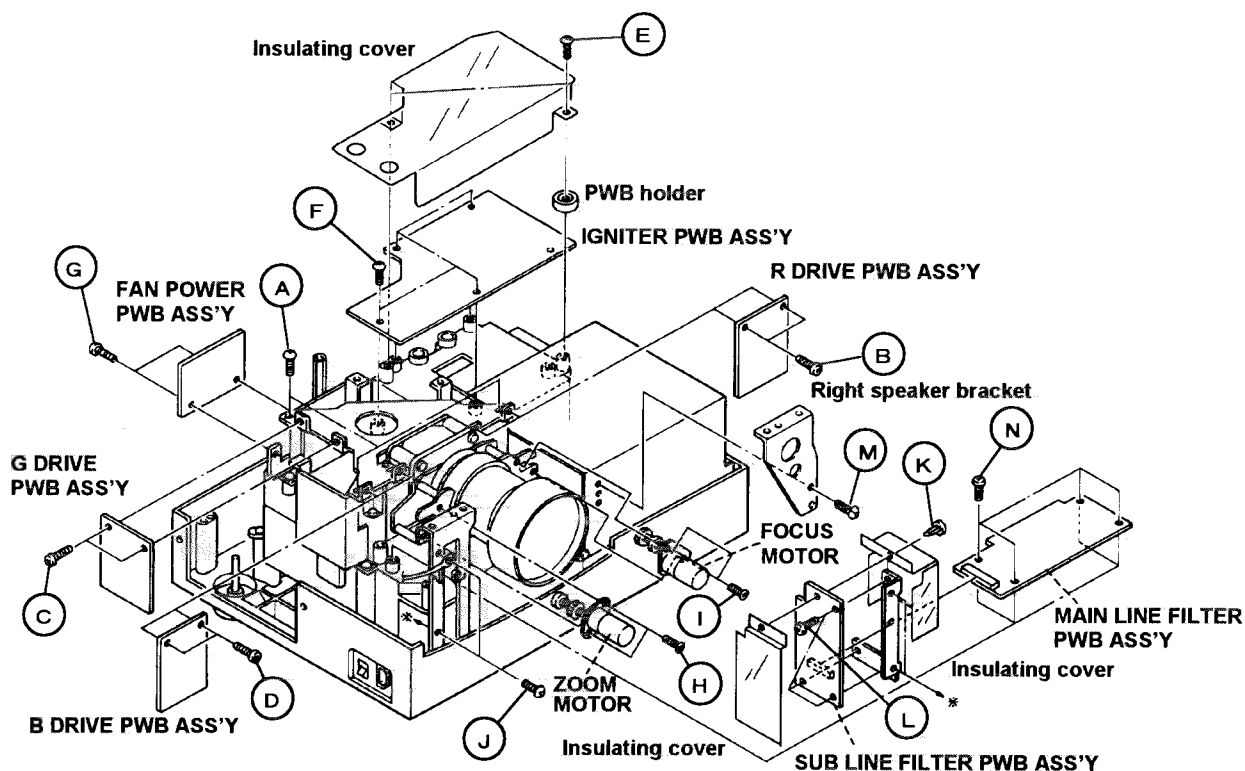
- Take out the TOP COVER.
- Take out the FRONT PANEL.
- 1. Take off 2 shield labels [D].
- 2. Remove 3 screws [E] and 3 screws [F], then take out the left and right speaker sections.
- 3. Take off 2 shield labels [G] and take out the shield cover.
- 4. Remove 2 screws [H].
- 5. Disconnect connectors 00R and 00B.
- 6. Disconnect connector 501.
- 7. Disconnect connector 00G.
- 8. Remove 4 screws [I] and take out the shield case.
- 9. Disconnect connectors A and OPD, then take out the DD PWB ASS'Y.

## ■ SIDE TERMINAL BOARD

- Take out the TOP COVER.
- Take out the FRONT PANEL.
- Take out the DD PWB ASS'Y.
- 1. Remove 2 screws [J] and 3 screws [K].
- 2. Together, lift up and take out the ANALOG PWB ASS'Y, DPC PWB ASS'Y and SIDE TERMINAL BOARD.
- 3. Remove 3 screws [L] and 4 screws [M].
- 4. Remove 4 hex bolts [N] and 2 hex bolts [O], then take out the SIDE TERMINAL BOARD.

## ■ ANALOG PWB ASS'Y and DPC PWB ASS'Y

- Take out the TOP COVER.
- Take out the FRONT PANEL.
- Take out the DD PWB ASS'Y.
- Take out the SIDE TERMINAL BOARD.
- 1. Remove 1 screw [P].
- 2. Disconnect connector 001 (separate the ANALOG and DPC PWB ASS'Ys).
- 3. Take out the shield cover of DPC PWB ASS'Y.
- 4. Remove 6 screws [Q].
- 5. Take off 2 shield labels [R] and take out the DPC PWB ASS'Y shield case.
- 6. Disconnect connector 00A and take out the DPC PWB ASS'Y.
- 7. Remove 3 screws [S] and take out the shield sheet.
- 8. Disconnect connectors B, D, E, F, G, J and K, then take out the ANALOG PWB ASS'Y.



#### ■ R / G / B DRIVE PWB ASS'Ys

- Take out the TOP COVER.
  - Take out the FRONT PANEL.
  - Take out the DD PWB ASS'Y.
1. Remove 3 screws [A].
  2. Remove 2 screws (R DRIVE : [B], G DRIVE : [C], B DRIVE : [D]).
  3. Slide both ends of the D-ILA device connector towards the flat wire to release the lock.
  4. Disconnect the flat wire from the connector and the R (G, B) DRIVE PWB ASS'Y.
- ※ Note the flat wire is easily damaged. Use care when disconnecting.

#### ■ IGNITER PWB ASS'Y

- Take out the TOP COVER.
  - Take out the FRONT PANEL.
  - Take out the DD PWB ASS'Y.
1. Remove 2 screws [E] and take out the insulating (transparent) cover together with the PWB holder.
  2. Remove 4 screws [F].
  3. Remove connecting screws (power supply input) PI and MI.
  4. Disconnect connectors 901 and VH.
  5. Remove 2 lamp connecting plugs (PO and MO) and take out the IGNITER PWB ASS'Y.

#### ■ FAN POWER PWB ASS'Y

- Take out the TOP COVER.
  - Take out the FRONT PANEL.
  - Take out the DD PWB ASS'Y.
  - Take out the DPC PWB ASS'Y (with ANALOG PWB ASS'Y and SIDE TERMINAL BOARD).
1. Remove 2 screws [G].
  2. Disconnect connectors 104, 105, 107, 108, 109 and 110, then the FAN POWER PWB ASS'Y.

#### ■ ZOOM MOTOR and FOCUS MOTOR

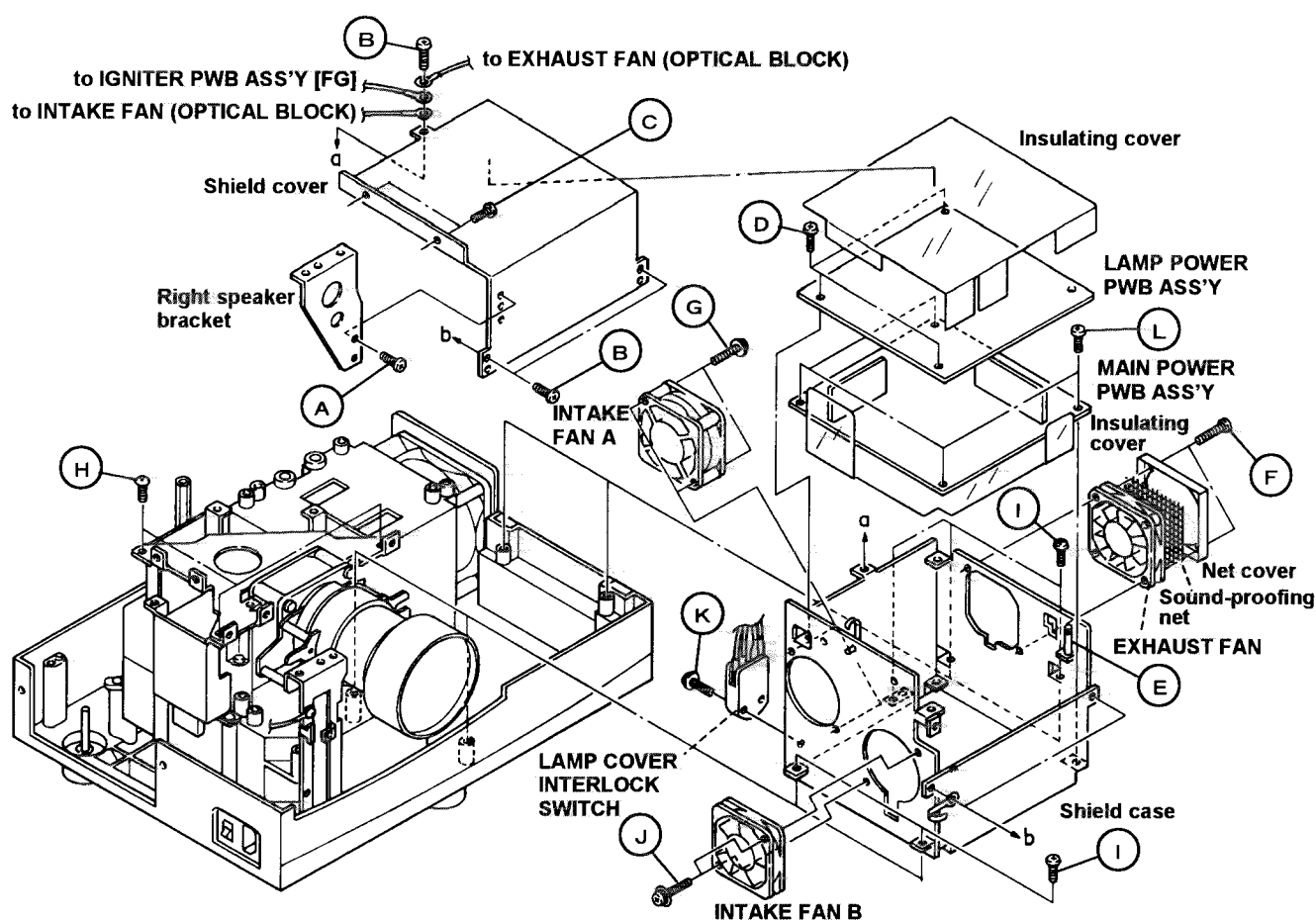
- Take out the TOP COVER.
  - Take out the FRONT PANEL.
1. Use a precision screwdriver and remove 2 screws (ZOOM : [H], FOCUS : [I]).
  2. Disconnect connectors (ZOOM : D, FOCUS : E) and take out the ZOOM (or FOCUS) MOTOR.

#### ■ SUB LINE FILTER PWB ASS'Y

- Take out the TOP COVER.
  - Take out the FRONT PANEL.
  - Take out the DD PWB ASS'Y.
  - Take out the analog (with DPC PWB ASS'Y and SIDE TERMINAL BOARD) PWB ASS'Y.
1. Disconnect connector PW6, and remove 2 screws [J], then extend the sub line filter section.
  2. Remove 1 rivet [K] and take out the (transparent) insulating covers from the respective parts and soldered sides of the PWB ASS'Y.
  3. Remove 3 screws [L] and take out the bracket.
  4. Disconnect connector PW1 and PW2, then take out the SUB LINE FILTER PWB ASS'Y.

#### ■ MAIN LINE FILTER PWB ASS'Y

- Take out the TOP COVER.
  - Take out the FRONT PANEL.
  - Take out the DD PWB ASS'Y.
  - Take out the ANALOG PWB ASS'Y (with DPC PWB ASS'Y and SIDE TERMINAL BOARD).
  - Take out the SUB LINE FILTER PWB ASS'Y.
1. Remove 3 screws [A] and shift the RGB drive section (R/G/B DRIVE PWB ASS'Ys and bracket) towards the right.
  2. Remove 1 screw [M] and take out the right speaker bracket.
  3. Remove 4 screws [N].
  4. Disconnect connectors PW3, PW4, PW5 and PW7 and remove connecting screw FG, then take out the MAIN LINE FILTER PWB ASS'Y.



### ■ LAMP POWER PWB ASS'Y

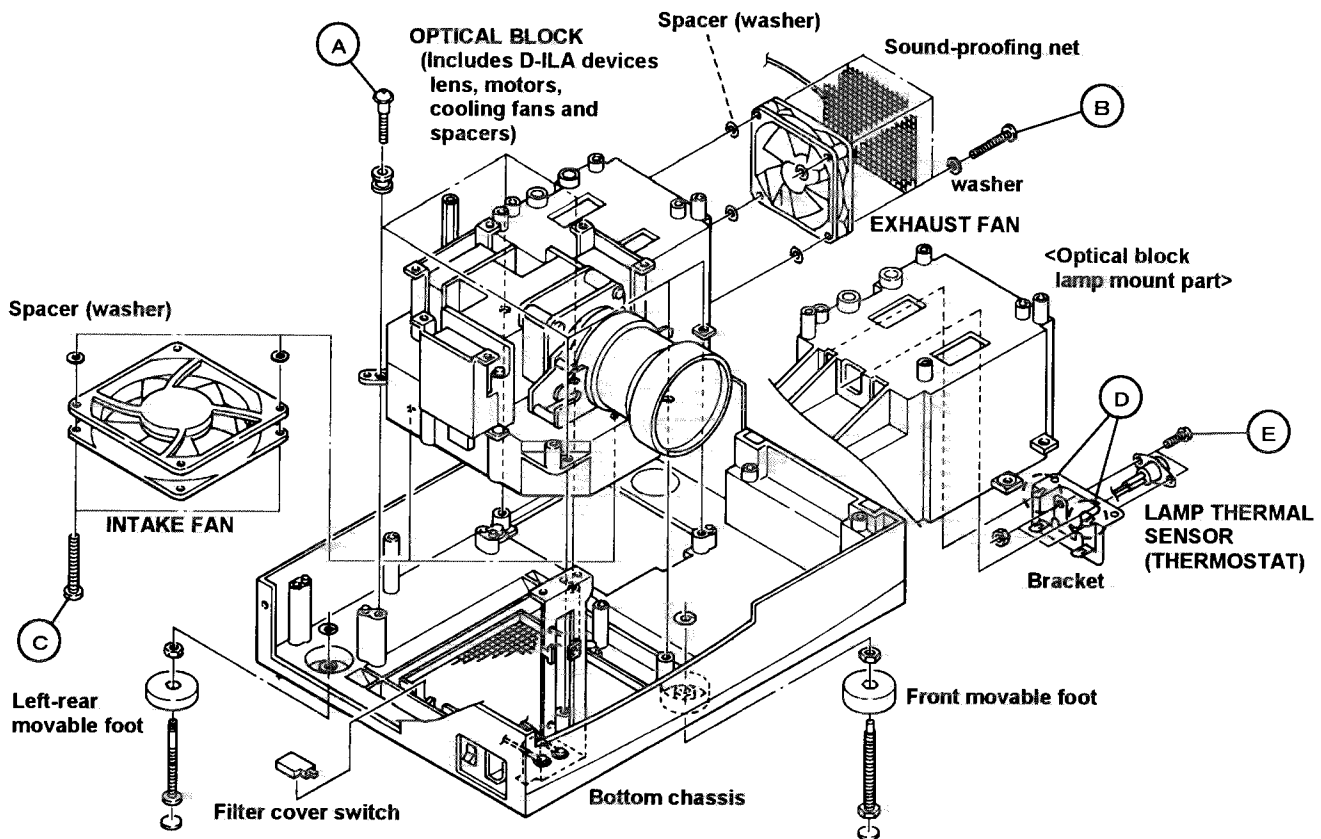
- Take out the TOP COVER.
  - Take out the FRONT PANEL.
  - Take out the DD PWB ASS'Y.
1. Remove 1 screw [A] and take out the right speaker bracket.
  2. Remove 3 screws [B] and 2 screws [C], then take out the shield cover.
  3. Lift up and take out the insulating (transparent) cover.
  4. Remove 3 screws [D] and disengage 1 boss [E].
  5. Disconnect connectors PW10, 901, 203 and VH, and remove 2 IGNITER PWB ASS'Y wire screws PO and MO, then take out the LAMP POWER PWB ASS'Y.

### ■ MAIN POWER PWB ASS'Y

- Take out the TOP COVER.
  - Take out the FRONT PANEL.
  - Take out the DD PWB ASS'Y.
  - Take out the LAMP POWER PWB ASS'Y.
  - Take out the EXHAUST FAN.
  - Take out the INTAKE FANS A and B.
1. Remove 4 screws [L].
  2. Disconnect connectors PW5, 100, 101, 102, 103, 106, 110 and 115.
  3. Lift up and take out the MAIN POWER PWB ASS'Y.

### ■ COOLING FAN (for POWER SECTION) and LAMP COVER INTERLOCK SWITCH

- Take out the TOP COVER.
  - Take out the FRONT PANEL.
  - Take out the DD PWB ASS'Y.
  - Take out the LAMP POWER PWB ASS'Y.
1. Remove 2 screws [F].
  2. Disconnect connector 106 and remove the EXHAUST FAN.
  3. Remove 2 screws [G].
  4. Disconnect connector 109 and take out the INTAKE FAN A.
  5. Remove 3 screws [H] and shift the RGB drive section toward the rear-right.
  6. Remove 5 screws [I].
  7. Take out the wire clamp and shield case.  
When lifting the shield case, use care not to damage the R D-ILA device flat cable.
  8. Remove 2 screws [J].
  9. Disconnect connector 105 and take out the INTAKE FAN B.
  10. Remove 1 screw [K].
  11. Disconnect connectors PW4 and PW10, then take out the LAMP COVER INTERLOCK SWITCH.



## ■ OPTICAL BLOCK

- Take out the TOP COVER.
- Take out the FRONT PANEL.
- Take out the DD PWB ASS'Y.
- Take out the SIDE TERMINAL BOARD, ANALOG and DPC PWB ASS'Ys.
- Take out the RGB drive section.
- Take out the IGNITER PWB ASS'Y.
- Take out the FAN POWER PWB ASS'Y.
- Take out the left and right speaker sections.
- Take out the ZOOM and FOCUS MOTORS.
- Take out the MAIN and SUB LINE FILTER PWB ASS'Ys.
- Take out the power block (power shield case).

1. Remove 6 screws [A].
2. Lift up and take out the OPTICAL BLOCK.

※ The OPTICAL BLOCK contains precision optical components (prism, mirrors, etc.). With the lens installed, the overall weight is shifted toward one side. Use care not to drop or subject to physical shock.

※ Spacers are easily damaged when taking out the OPTICAL BLOCK. Be sure to replace spacers when severely damaged.

※ The OPTICAL BLOCK does not include the LAMP ASS'Y.

## ■ COOLING FAN (for OPTICAL BLOCK)

- Take out the TOP COVER.
- Take out the FRONT PANEL.
- Take out the DD PWB ASS'Y.
- Take out the SIDE TERMINAL BOARD, ANALOG and DPC PWB ASS'Ys.
- Take out the RGB drive section.
- Take out the IGNITER PWB ASS'Y.
- Take out the FAN POWER PWB ASS'Y.
- Take out the left and right speaker sections.
- Take out the ZOOM and FOCUS MOTORS.
- Take out the MAIN and SUB LINE FILTER PWB ASS'Ys.
- Take out the power block (power shield case).

1. Remove 4 screws [B].
2. Disconnect connector 107 and take out the EXHAUST FAN together with the sound-proofing net.
3. Remove 2 screws [C].
4. Disconnect connector 104 and take out the INTAKE FAN.

## ■ LAMP THERMAL SENSOR (THERMOSTAT)

- Take out the TOP COVER.
  - Take out the FRONT PANEL.
  - Take out the DD PWB ASS'Y.
  - Take out the IGNITER PWB ASS'Y.
1. Take out the LAMP ASS'Y.
  2. Disengage 2 hooks [D] and take out the bracket.
  3. Fix the nuts and remove 2 screws [E].
  4. Disconnect the relay connector and take out the LAMP THERMAL SENSOR.

# SERVICE ADJUSTMENTS

## Before starting adjustment

1. Adjustment items utilize a personal computer. Refer to the instruction manual of the adjustment software regarding software handling and setup.
2. This instruction is for PSA Control Program Ver. 1.1.2. Use the latest version program.
3. Allow the equipment and test instruments adequate time (at least 30 minutes) to warm-up.
4. Confirm the set is properly connected to the specified AC power source.
5. Use care not to disturb internal controls and parts not specifically mentioned.
6. Unless specifically mentioned in the adjustment steps, do not change any data.
7. Refer to the standard schematic diagram for testpoint locations.
8. Values for adjustment by computer are stored in the EEPROM of the ANALOG PWB ASS'Y. It is thus recommended to make a backup of the adjustment data beforehand. This will shorten the service time needed in event the ANALOG PWB ASS'Y needs to be replaced. An alternative suggestion is install an EEPROM that contains the adjustment data on the replacement PWB ASS'Y.
9. The adjustment sequence is described in the manual.

## Instruments and tools

DC voltmeter (digital voltmeter)

Oscilloscope

NTSC signal generator (composite and S output): Greyscale (0IRE – 100IRE)

HDTV signal generator (Y, PB, PR outputs): Greyscale (0IRE – 100IRE)

VGA signal generator: Following flat patterns: 100% red, 100% green, 100% blue,

80% red, 80% green, 80% blue,

50% red, 50% green, 50% blue,

100% white, 60% white, 0% black,

Following window patterns: 100%, 93%, 87%, 80%, 70%, 63%, 60%, 57%, 50%, 43%, 37%, 30%, 20%, 13%, 7%

Greyscale: 15steps (above 14 signal levels and 0%)

Screen

Darkroom (illumination less than 0.03 lux)

Lightmeter: Minolta T-1

Personal computer

Operating system	Windows 95
Memory	More than 16 Mbytes
Hard disk free space	More than 5 Mbytes
RS-232C interface	At least 1 port
Display resolution	Minimum: 800 × 600 pixels Recommended: 1024 × 768 pixels or better
Display colors	Minimum: 8 bits/pixel Recommended: 16 bits/pixel or better
Input devices	Keyboard and mouse

D-ILA PSA control software

RS-232C 9pin NULL-MODEM (cross) cable

Photodiode or Phototransistor with DC bias voltage

## Adjustment procedure

### Electrical adjustment

#### 1. Data input

Required if the ANALOG PWB ASS'Y (including EEPROM) is replaced or if the EEPROM is replaced to the new device that does not contain initial data.

Instrument: NTSC Signal generator

- (1) Set the equipment to the standby mode (signal not needed).
- (2) Start the PSA software and open Service Menu **Area Data** , then click **Transmit all** .  
(By performing this, area data are transmitted for all circle-marked items of the table.)

Input source table

Signal name	Y/C	VIDEO	Y-Pb-Pr	COMPUTER1	COMPUTER 2
NTCS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>
PAL/SECAM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>
EDTV 2			<input type="radio"/>		<input type="radio"/>
HDTV			<input type="radio"/>		<input type="radio"/>
PC98				<input type="radio"/>	<input type="radio"/>
VGA1				<input type="radio"/>	<input type="radio"/>
VGA2				<input type="radio"/>	<input type="radio"/>
MAC13				<input type="radio"/>	<input type="radio"/>
VGA VESA				<input type="radio"/>	<input type="radio"/>
SVGA1				<input type="radio"/>	<input type="radio"/>
SVGA2				<input type="radio"/>	<input type="radio"/>
MAC16				<input type="radio"/>	<input type="radio"/>
XGA1				<input type="radio"/>	<input type="radio"/>
XGA2				<input type="radio"/>	<input type="radio"/>
MAC19				<input type="radio"/>	<input type="radio"/>
MAC21				<input type="radio"/>	<input type="radio"/>
SXGA1				<input type="radio"/>	<input type="radio"/>
SXGA2				<input type="radio"/>	<input type="radio"/>
SXGA3				<input type="radio"/>	<input type="radio"/>

- (3) Supply NTSC YC separate signal to the Y/C input terminal and set the equipment to the operate mode (switch on) then open main menu **Set Up** , select Y/C of **LINE** .
- (4) Select the file A00\_L00.acd by **File(E)** **Open(O)** , then click **Open(O)** .
- (5) Open Service Menu **DDIC** , then click **Transmit all** . (use data A00\_L00.acd)
- (6) Open Service Menu **SGRAM** , then click **transmit** . (use data A00\_L00.acd)
- (7) Open Service Menu **DPC** , Change the Table No. to 0, then click **ADR Transmit** and **IMD Transmit** .  
Click **ADR Transmit** and **IMD Transmit** for the Table No. 1, 2 and 3.  
(use data A00\_L00.acd)
- Important: Do not click Transmit all.**
- (8) Open Service Menu **EVR** **ILA** , and then do asking with left click for all vales of this chart and setup as this chart.

	setup vale
COM Voltage R	120
COM Voltage G	123
COM Voltage B	124
VIDEO voltage R	130
VIDEO voltage G	130
VIDEO voltage B	130



## 2. COM DC adjust

Required when replacing the DD PWB ASS'Y or optical block.

Instruments: VGA Signal generator

Photodiode or Phototransistor with DC bias voltage

- (1) Project a VGA 50% red signal.
- (2) Connect the photodiode (or Phototransistor) with DC bias to the oscilloscope and place in front of the lens where the most easy point to observe the flicker.

**Notes:** Do not adjust under the lamp that flicker.

- (3) Observe the light volume with the oscilloscope and after asking Service Menu **EVR** **ILA** **COM Voltage R**, adjust to minimize the waveform amplitude.
- (4) Similarly, project 50% green and 50% blue signals and respectively adjust **COM Voltage G** **COM Voltage B**.

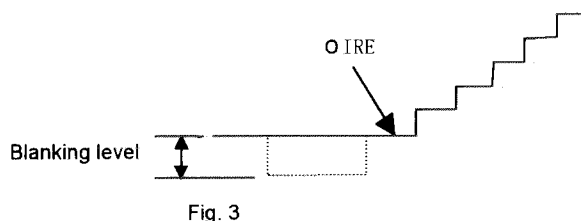
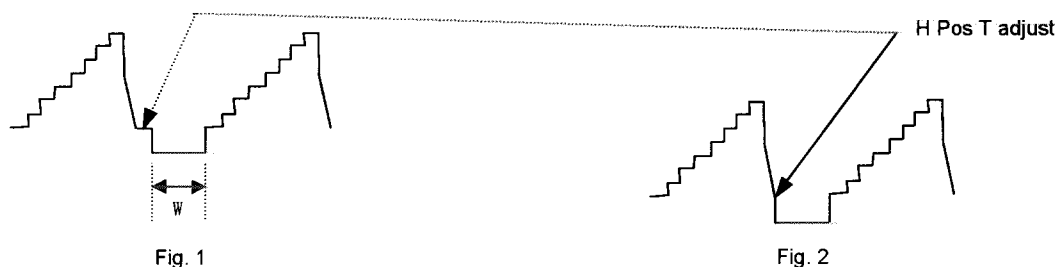
**Notes:** Large deviation of this adjustment can cause image flicker. Element burn can occur when out of adjustment.

## 3. NTSC timing and pedestal

Required when replacing ANALOG PWB ASS'Y.

Instrument: NTSC Signal generator

- (1) Apply an NTSC YC separate greyscale signal to the Y/C input terminal.
- (2) Open main menu **Set Up**, select Y/C of **LINE**.
- (3) Connect the oscilloscope to ANALOG PWB ASS'Y TP-102 (ground at TP-1E).
- (4) Display Service Menu **EVR** **DECOD**, click **Pedestal level**, **HPOS Timing T** and **HPOS Timing W**, then set to 255.
- (5) Observe the waveform with the oscilloscope and adjust **HPOS Timing W** to set the blanking W (Fig. 1) to 11  $\mu$ s.
- (6) Adjust **HPOS Timing T** to align the rear edge of the video signal (greyscale) with the front edge of the adjusted blanking W (Fig. 2).
- (7) Adjust **Pedestal level** to the blanking to the same level as 0 IRE (Fig. 3).

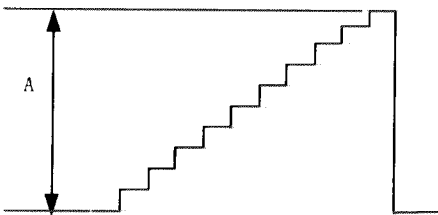


4. NTSC RGB contrast

Required after replacing ANALOG PWB ASS'Y.  
Instrument: NTSC signal generator

- (1) Apply a NTSC YC separate greyscale signal to the Y/C input terminal.
- (2) Set the line to Y/C.
- (3) Observe the ANALOG PWB ASS'Y testpoint TP-305 with the oscilloscope. Open Service Menu **EVR** **NTSC** , click **G Gain** and set the voltage from 0 to 100 IRE to 0.7Vp-p(level A of Fig.).  
**Notes: Adjust the green gain before the adjusting red and blue.**
- (4) Observe the ANALOG PWB ASS'Y testpoints indicated below with the oscilloscope. Click the following gain items of the Service Menu **EVR** **NTSC** and set the voltages from 0 to 100 IRE (level A of Fig.).

	Testpoint	Setting voltage
G Gain	TP-305	0.7Vp-p
R Gain	TP-304	0.7Vp-p
B Gain	TP-306	0.7Vp-p

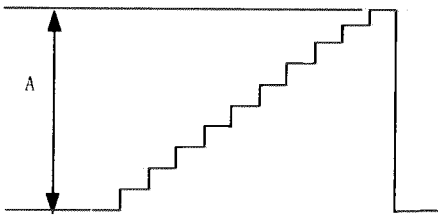


5. HDTV contrast

Required after replacing ANALOG PWB ASS'Y.  
Instrument: HDTV Signal generator

- (1) Apply a HDTV greyscale signal to the Y PB PR terminal.
- (2) Set the line to Y PB PR.
- (3) Observe the ANALOG PWB ASS'Y testpoint TP-305 with the oscilloscope. Open Service Menu **EVR** **NTSC** , click **G Gain** and set the voltage from 0 to 100 IRE to 0.7Vp-p(level A of Fig.).  
**Notes: Adjust the green gain before the adjusting red and blue.**
- (4) Observe the ANALOG PWB ASS'Y testpoints indicated below with the oscilloscope. Click the following gain items of the Service Menu **EVR** **NTSC** and set the voltages from 0 to 100 IRE (level A of Fig.).

	Testpoint	Setting voltage
G Gain	TP-305	0.7Vp-p
R Gain	TP-304	0.7Vp-p
B Gain	TP-306	0.7Vp-p



## 6. A/D converter aperture

Required after replacing DPC PWB ASS'Y.

This item must be done for DPC PWB ASS'Y individually before assembling.

Instruments: VGA Signal generator

- (1) Set the Service Menu **Status/Ctrl** **Electric Power** to **On** to supply power to the DPC PWB ASS'Y.
- (2) Push the OPERATE button of the set and confirm the STAND BY LED is blinking.
- (3) Observe the following DPC PWB ASS'Y testpoints with the oscilloscope.
- (4) Open Service Menu **EVR** **ADCV** . After asking the following items, adjust the following voltages (DC). (Ground is TP-001.)

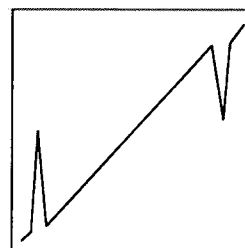
	Testpoint	Setting voltage
ADCV(H)R	TP-302	3.6V
ADCV(H)G	TP-304	3.6V
ADCV(H)B	TP-306	3.6V
ADCV(L)R	TP-301	1.6V
ADCV(L)G	TP-303	1.6V
ADCV(L)B	TP-305	1.6V

## 7. Sub-bright and sub-contrast

Required after replacing the DPC PWB ASS'Y.

This item must be done for DPC PWB ASS'Y after installing to the set.

Instrument: VGA Signal generator



- (1) Supply VGA greyscale signal and project on screen.
- (2) Open Service Menu **Gamma** , **Receive** **G** gamma data.
- (3) Make a note of the Control Point 1 and 15 (0 % and 100 %) Y Position data.
- (4) As shown in the figure, raise the Control Points 1 and lower the Control Points 15 data. (aprox. 512)
- (5) Change Interpolation to Line, then **Transmit** data.
- (6) Open Service Menu **EVR** **ILA** , click and make a note of the **OFFSET Voltage R** , **OFFSET Voltage G** and **OFFSET Voltage B** .
- (7) Open Service Menu **EVR** **ILA** , set the **OFFSET Voltage R** , **OFFSET Voltage B** to 255.
- (8) Open Service Menu **DDIC** and set **GIN** , **DYN** and **LUM** to **Off** (only **GAM** is **On** ).
- (9) Open Service Menu **EVR** **BRIGHT** .
- (10) Adjust **BRIGHT G** so that the 0 % screen component brightness rise is sharp and maximum brightness.
- (11) Open Service Menu **EVR** **CONT** .
- (12) Adjust **CONT G** so that the 100 % screen component brightness fall is sharp and darkest.
- (13) Return the **Gamma** **G** Control Points 1 and 15 data noted above, change Interpolation to Spline and **Transmit** .
- (14) Open Service Menu **EVR** **ILA** , return **OFFSET Voltage R** and **OFFSET Voltage B** to the data noted above.
- (15) In the same manner as G, adjust the R and B sub brightness and sub contrast.
- (16) Open Service Menu **DDIC** and return **GIN** , **DYN** and **LUM** to **On** .

## 8. (1) Gamma adjustment (factory service)

Cannot be adjusted without a darkroom and lightmeter. If not available, do gamma adjustment (field service) of 8. -(2).  
Required after replacing DD PWB ASS'Y or optical block.

Instruments: VGA Signal generator  
Lightmeter (Minolta T-1)

### (1) Preparation

- 1) Project some signal.
- 2) If the EEPROM does not contain gamma data, select file standard.acd by **File(E)** **Open(O)** , then click **Open(O)** , and open Service Menu **Gamma** , click **Transmit** for **R** , **G** and **B** .
- 3) Change interpolation to line.
- 4) Open Service Menu **DDIC** **Gain** , click **All 8 Bars** , then set Red, Green and Blue Gain CH #1 – #8 numerical values to 255 by **GIN** .
- 5) Open Service Menu **DDIC** and set **LUM** to **Off** then Open main menu **Picture** and set **Color Temp** to **Middle** .

### (2) G MAX luminance measurement

- 1) Open Service Menu **EVR** **ILA** , click and make a note of the **OFFSET Voltage R** , **OFFSET Voltage G** and **OFFSET Voltage B** .
- 2) Open Service Menu **EVR** **ILA** , then set **OFFSET Voltage R** and **OFFSET Voltage B** to 255.
- 3) Open Service Menu **DDIC** then click **GIN** and **GAM** and confirm both of them are **On** .
- 4) Project G only of VGA 100 % window pattern signal and measure the screen center luminance
- 5) Open Service Menu **EVR** **ILA** and adjust **OFFSET Voltage G** to maximum luminance and make a note as maximum luminance.

### (3) G adjustment target computation

- 1) From the measured G maximum luminance, compute the 100 to 0 % target adjustment values from the luminance table.

**luminance table**

Luminance (%)	Control Point	X coordinates	Signal ratio	YL output (lux ratio)	Target computation formula	Computed value
	1 6	1 0 2 3				
1 0 0	1 5	9 6 0	1 0 0	1 0 0	Max. luminance × 0.95	
9 3	1 4	8 9 6	9 3	8 5 . 2 4	100 % luminance computed value × YL output	
8 7	1 3	8 3 2	8 7	7 3 . 6 1	↑	
8 0	1 2	7 6 8	8 0	6 1 . 2 1	↑	
7 0	1 1	7 0 4	7 0	4 5 . 6 3	↑	
6 3	1 0	6 4 0	6 3	3 6 . 1 9	↑	
5 7	9	5 7 6	5 7	2 9 . 0 4	↑	
5 0	8	5 1 2	5 0	2 1 . 7 6	↑	
4 3	7	4 4 8	4 3	1 5 . 6 2	↑	
3 7	6	3 8 4	3 7	1 1 . 2 2	↑	
3 0	5	3 2 0	3 0	7 . 0 7	↑	
2 0	4	2 5 6	2 0	2 . 9 0	↑	
1 3	3	1 9 2	1 3	1 . 1 2	↑	
7	2	1 2 8	9 . 5	0 . 5 6	↑	
0	1	6 4	0	0 . 3 0	↑	
	0	0				

(4) G luminance adjustment

- 0 % luminance
  - 1) Supply G only of VGA 0 % black signal.
  - 2) Open Service Menu **EVR** **ILA** , click **OFFSET Voltage G** , then adjust to the computed value  $\pm 5\%$ .
- 100 % luminance
  - 1) Supply G only of VGA 100 % window pattern signal.
  - 2) Open Service Menu **DDIC** **Gain** , click **All 8 Bars** , click one number of Green Gain #1 - #8 then adjust **GIN** to the computed value  $\pm 5\%$ .
- 50 % luminance
  - 1) Supply G only of VGA 50 % window pattern signal.
  - 2) Open Service Menu **Gamma** , click **G** and **Receive** gamma data.
  - 3) Adjust the Y value at the gamma curve X-axis Control Points 7, 8 and 9 (48 %, 50 % and 57 %) in the same manner to the above computed target value  $\pm 10\%$ .

**Note: Transmit the data at each Y value adjustment of the screen.**
- 93 % - 7 % luminance
  - 1) In the same manner as 50 %, adjust Control Points 11, 12 and 13 for 80 % and Control Points 4, 5 and 6 for 30 %.
  - 2) Sequentially adjust for other Control Point (1, 2, 3, 10, 14 and 15) for smooth conformance with the gamma curve.
  - 3) Change Interpolation to Spline.
  - 4) Adjust the 96% (Control Points 13, 14 and 15) in the same manner to the above computed target value  $\pm 5\%$  and smooth conformance with the gamma curve
  - 5) Adjust 80% (Control Points 11, 12 and 13), 57% (Control Points 8, 9 and 10), 43% (Control Points 6, 7 and 8), 30% (Control Points 4, 5 and 6) and 13% (Control Points 2, 3 and 4), in the same manner to the above computed target values and smooth conformance with the gamma curve
- 0 % and 100 % readjust
  - 1) Readjust the 0 % (Control Points 1) and 100 % (Control Points 15) luminance to the computed value  $\pm 5\%$ .
- final confirmation
  - 1) Sequentially adjust for other Control Point (2, 4, 6, 8, 10, 11 and 13) for smooth conformance with the gamma curve.
  - 2) Supply VGA greyscale signal and confirm normal gradation on the screen.

(5) Data re-input

- 1) Open Service Menu **EVR** **ILA** , then return **OFFSET Voltage R** and **OFFSET Voltage B** to the values noted above.

(6) R and B gamma

- 1) In the same manner as G, measure max. luminance, compute the target values, adjust the luminance and do the data re-input.
- 2) Supply VGA greyscale signal and confirm normal gradation and white balance for each signal level.

(7) At the end of adjustment

- 1) Open Service Menu **DDIC** and return **LUM** to **On** .

## 8 . (2) Gamma adjustment (field service)

Required after replacing the DD PWB ASS'Y or optical block

Instrument: VGA Signal generator

- (1) Project some signal.
- (2) If the EEPROM does not contain gamma data, select file standard.acd by **File(E)** **Open(O)** , then click **Open(O)** , and open Service Menu **Gamma** , click **Transmit** for **R** , **G** and **B** .

- (3) Project G only of VGA greyscale signal.

- (4) Open Service Menu **Gamma** then select **G** and adjust each Control Point for natural gradation at each signal level.

**Note: Transmit the data for each Y Position adjustment of the screen.**

- (5) Supply VGA greyscale signal.

- (6) Adjust R gamma and B gamma similarly as G gamma for natural white balance at each signal level.

**Note: Transmit the data for each Y Position adjustment of the screen.**

## 9 . D-ILA clock phase adjustment

Required after replacing the DD PWB ASS'Y or optical block.

- (1) Display onscreen.
- (2) Open Service Menu **DDIC** **Pixel** and adjust **DDCDLY** to minimize the ghost.

**Note: Cancel the left side ghost and minimize the right side ghost.**

# 1 0. White shading

Required after replacing the ANALOG PWB ASS'Y, DD PWB ASS'Y or optical block

Instruments: VGA Signal generator  
Lightmeter (Minolta T-1)

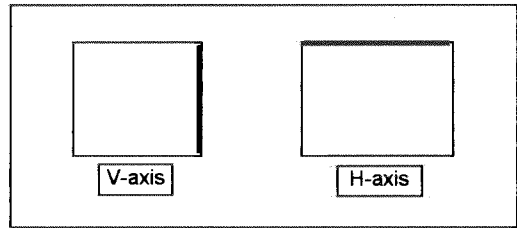
## (1) Preparation

- 1) Supply VGA 60 % white signal.
- 2) Open Service Menu **Shading** ,click **LUM** and set **R** **G** **B** as Chart 1(Fig. 1), then **Transmit** each.
- 3) Open Service Menu **Shading** ,click **DYN** and set **R** **G** **B** as Chart 1(Fig. 1), then **Transmit** each.

Chart 1

V:	Right (Top in fig.)	Center	Left (Bottom in fig.)
X:	0	127	255
Y:	255	255	255
H:	Right	Center	Left
X:	0	170	341
Y:	255	255	255

Fig. 1

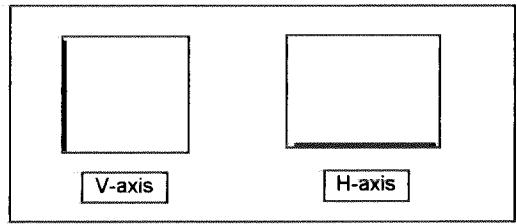


- 4) Open Service Menu **Shading** ,click **STC** and set **R** **G** **B** as Chart 1(Fig. 2), then **Transmit** each.

Chart 2

V:	Right (Top in fig.)	Center	Left (Bottom in fig.)
X:	0	127	255
Y:	0	0	0
H:	Right	Center	Left
X:	0	170	341
Y:	0	0	0

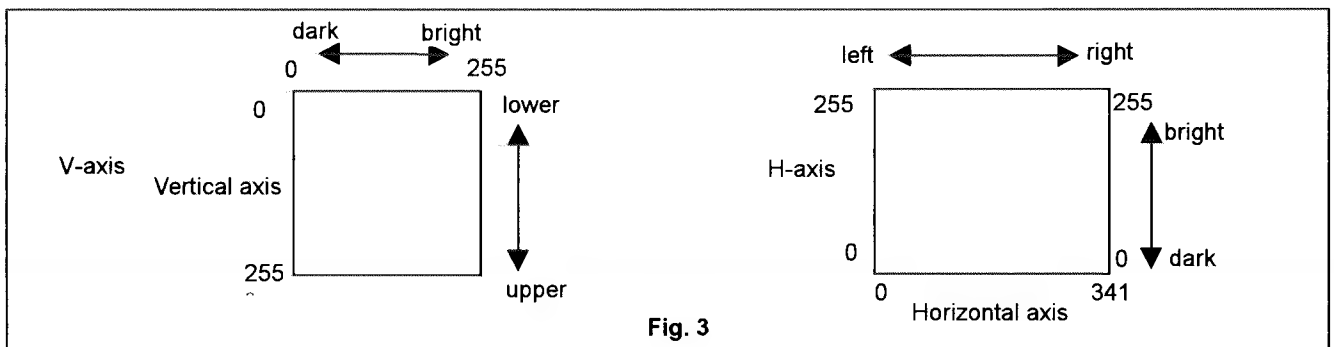
Fig. 2



- 5) Open Service Menu **DDIC** then set **GIN** , **GAM** and **DYN** to **On** ,and set **STC** and **LUM** to **Off** .

## (2) G adjustment

- 1) Open Service Menu **Shading** , click **DYN** and click **G** .
- 2) Vary the Y: data and interpolation of H-axis as indicated in Fig. 3 and adjust to minimize the horizontal shading on the screen.  
**Note: One of the Y: value of Right end, Center or Left end must be 255.**  
**Transmit the data at each adjustment.**
- 3) Vary the Y: data and interpolation of V-axis as indicated in Fig. 3 and adjust to minimize the vertical shading on the screen.  
**Note: One of the Y: value of Right end, Center or Left end must be 255.**  
**Transmit the data at each adjustment**



(3) R and B adjustment

- 1) In the same manner as G, adjust Service Menu **Shading** **DYN** , **R** and **G** .

(4) Screen center luminance adjustment

**Note:** This adjustment must be performed if H V-axis center values (H: 170, V: 127) were adjusted.

- 1) Supply G only of VGA 100 % white signal.
- 2) Open Service Menu **EVR** **ILA** , click and make a note of the **OFFSET Voltage R** , **OFFSET Voltage G** and **OFFSET Voltage B** .
- 3) Open Service Menu **EVR** **ILA** , then set **OFFSET Voltage R** and **OFFSET Voltage B** to 255.
- 4) Open Service Menu **DDIC** and measure the screen center luminance both **DYN** **On** and **Off** .
- 5) Open Service Menu **DDIC** **Gain** , click **All 8 Bars** and one of Green #1 - #8 number display area, adjust **GIN** to almost same luminance both **DYN** **On** and **Off** .
- 6) Open Service Menu **EVR** **ILA** , then return **OFFSET Voltage R** and **OFFSET Voltage B** to the values noted above.
- 7) In the same manner as G, adjust R and B.

(5) Data input

- 1) Open Service Menu **DDIC** and return **LUM** to **On** .

## 1 1 . 8 bars adjustment

Required after replacing the DD PWB ASS'Y, Gamma adjustment, and Shading adjustment.

Instrument: VGA Signal generator

(1) Preparation

- 1) Adjust the focus to get the best focus on the screen.

(2) Black 8 bars adjustment

- 1) Supply G only of VGA 0 % signal.
- 2) Open Service Menu **DDIC** then set **GIN** , **GAM** and **DYN** to **On** ,and set **LUM** to **Off** .
- 3) Open Service Menu **EVR** **ILA** , click and make a note of the **OFFSET Voltage R** , **OFFSET Voltage G** and **OFFSET Voltage B** .
- 4) Open Service Menu **EVR** **ILA** , then set **OFFSET Voltage R** and **OFFSET Voltage B** to 255.
- 5) Open Service Menu **EVR** **ILA** ,adjust **OFFSET Voltage G** for observation of the vertical lines.
- 6) Open Service Menu **Gamma** **G** , adjust Green Gamma Offset1 - 8 to cancel the vertical lines.

**Note:** For observation of the vertical line's correspondence, change the Offset1 value much higher.

(3) White 8 bars adjustment

- 1) Supply G only of VGA 80 % signal.
- 2) Open Service Menu **EVR** **ILA** ,adjust **OFFSET Voltage G** for observation of the vertical lines.
- 3) Open Service Menu **DDIC** **Gain** , click **Only 1 Bar** , adjust #1 - #8 to cancel the vertical lines.

**Note:** For observation of the vertical line's correspondence, change the #1 value much lower.

(4) R and B adjustment

- 1) In the same manner as G, adjust R and B.

(5) Data input

- 1) Open Service Menu **EVR** **ILA** , then return **OFFSET Voltage R** , **OFFSET Voltage G** and **OFFSET Voltage B** to the values noted above.
- 2) Open Service Menu **DDIC** and return **LUM** to **On** .





DLA-G10E  
DLA-G10EK

# DLA-G10E/DLA-G10EK STANDARD CIRCUIT DIAGRAM

## CONTENS

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■ WIRING DIAGRAM .....	2-5
■ BLOCK DIAGRAM .....	2-7
■ CIRCUIT DIAGRAMS AND PWB PATTERNS	

PWB's name	PWB ASS'Y No.	diagram	pattern
REMOTE CONTROL SENSOR PWB ASS'Y	SXA-8001A	2-16	—
MAIN POWER PWB ASS'Y	SXA-9002B	2-9	2-13
LAMP POWER PWB ASS'Y	SXA-9102B	2-11	2-14
FAN POWER PWB ASS'Y	SXA-9201B	2-9	2-15
IGNITER PWB ASS'Y	SXA-9301B	2-11	2-15
MAIN LINE FILTER PWB ASS'Y	SXA-9502B	2-9	2-16
SUB LINE FILTER PWB ASS'Y	SXA-9512B	2-9	2-16

## NOTE ON USING CIRCUIT DIAGRAMS

### 1. SAFETY

The components identified by the  $\Delta$  symbol and shading are critical for safety. For continued safety, replace safety critical components only with manufactures recommended parts.

### 2. SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

- |   |   |
|---|---|
| (1) Input signal  | : Color bar signal (VGA : 640 × 480)              |
| (2) Setting positions of each knob / button and variable resistor | : Original setting position when shipped          |
| (3) Internal resistance of tester                                 | : DC 20 k $\Omega$ / V                            |
| (4) Oscilloscope sweeping time                                    | : H $\Rightarrow$ 20 $\mu$ s / div                |
|   | : V $\Rightarrow$ 5ms / div                       |
|   | : Others $\Rightarrow$ Sweeping time is specified |
| (5) voltage values  | : All DC voltage values                           |

\* Since the voltage values of signal circuit vary to some extent according to adjustment, use them as reference values.

### 3. INDICATION OF PARTS SYMBOL [EXAMPLE]

- In the PW board : R1209  $\rightarrow$  R209

4. INDICATIONS ON THE CIRCUIT DIAGRAM

(1) Resistors

●Resistance value	●Type
No unit : [ $\Omega$ ]	No indication : Carbon resistor
K : [ $k\Omega$ ]	OMR : Oxide metal film resistor
M : [ $M\Omega$ ]	MFR : Metal film resistor
●Rated allowable power	MPR : Metal plate resistor
No indication : 1/6 [W]	UNFR : Uninflammable resistor
Others : As specified	FR : Fusible resistor
	* Composition resistor 1/2[W] is specified as 1/2S or Comp.

(2) Capacitors

●Capacitance value	●Type
1 or higher : [ $pF$ ]	No indication : Ceramic capacitor
less than 1 : [ $\mu F$ ]	MY : Mylar capacitor
●Withstand voltage	MM : Metalized Mylar capacitor
No indication : DC50 [V]	PP : Polypropylene capacitor
Others : DC withstand voltage [V]	MPP : Metalized polypropylene capacitor
AC indicated : AC withstand voltage [V]	MF : Metalized film capacitor
※Electrolytic Capacitors [Example]	TF : Tin film capacitor
47/50 : Capacitance value[ $\mu F$ ] / withstand voltage[V]	BP : Bipolar electrolytic capacitor
	TAN : Tantalum capacitor

(3) Coils



No unit	: [ $\mu H$ ]
Others	: As specified

(4) Power Supply

	: B1 (130v)
	: B2 (12V)
	: 5V

\* Respective voltage values are indicated





(5) Test Point

	: Test point
	: Only test point display

(6) Connecting Method

	: Connector	
	: Wrapping or soldering	
	: Receptacle (On the PWB)	
		 : Receptacle (On the wire)

(7) Ground Symbol

	: LIVE side ground
	: ISOLATED (NEUTRAL) side ground [analog circuit]
	: EARTH ground
	: ISOLATED (NEUTRAL) side ground [digital circuit]

5. NOTE FOR REPAIRING SERVICE

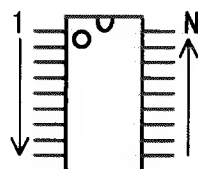
This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : ( $\perp$ ) side GND and the ISOLATED (NEUTRAL) : ( $\text{⏏}$ ) side GND. Therefore, care must be taken for the following points.

- (1) Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED (NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.
- (2) Do not short between the LIVE side GND and ISOLATED (NEUTRAL) side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED (NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

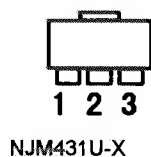
◇ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

## SEMICONDUCTOR SHAPES

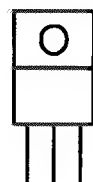
### IC



FA5331M  
FA7612CN  
UC3843BD1-X  
UPC358G-W



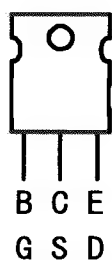
NJM431U-X



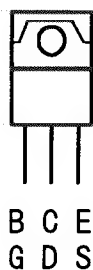
IN E OUT

AN7915F  
IFR9630  
TA79005S  
UPC2412AHF

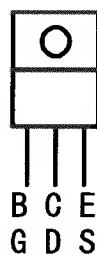
### Transistors



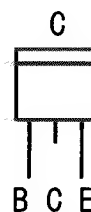
2SK2196



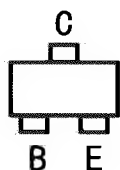
2SK1017MR-01



2SA1471(R)  
2SC3751

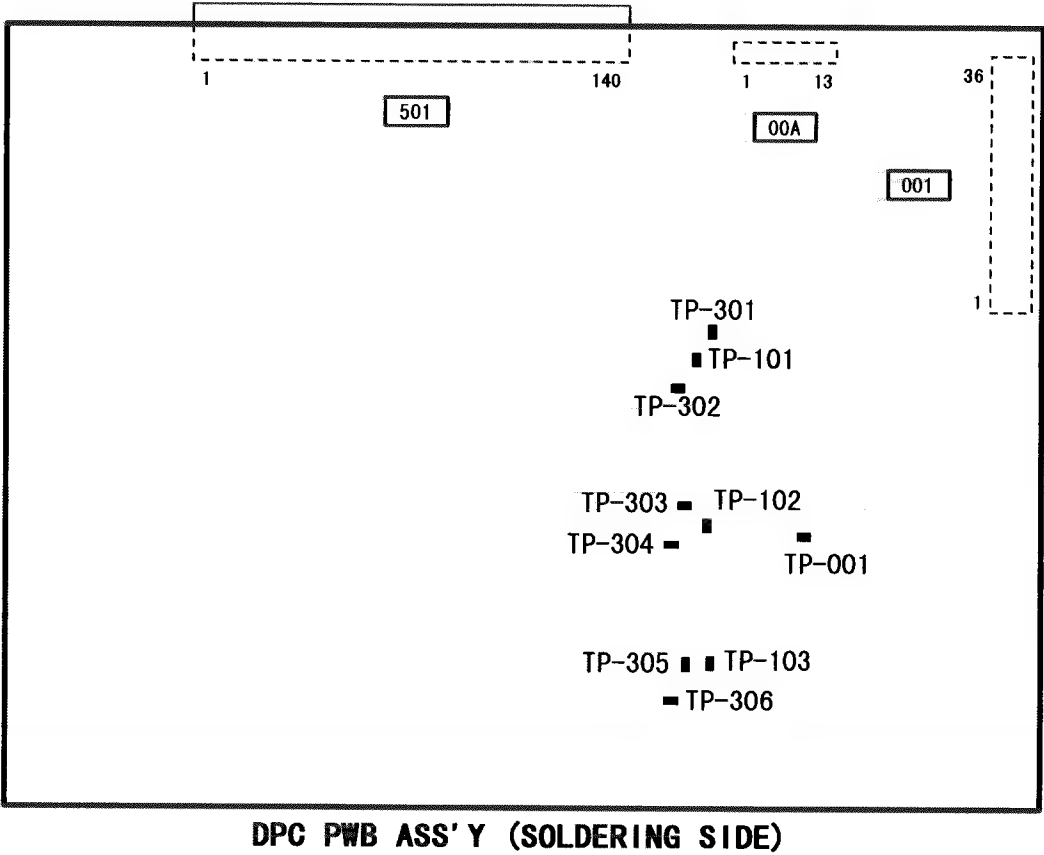
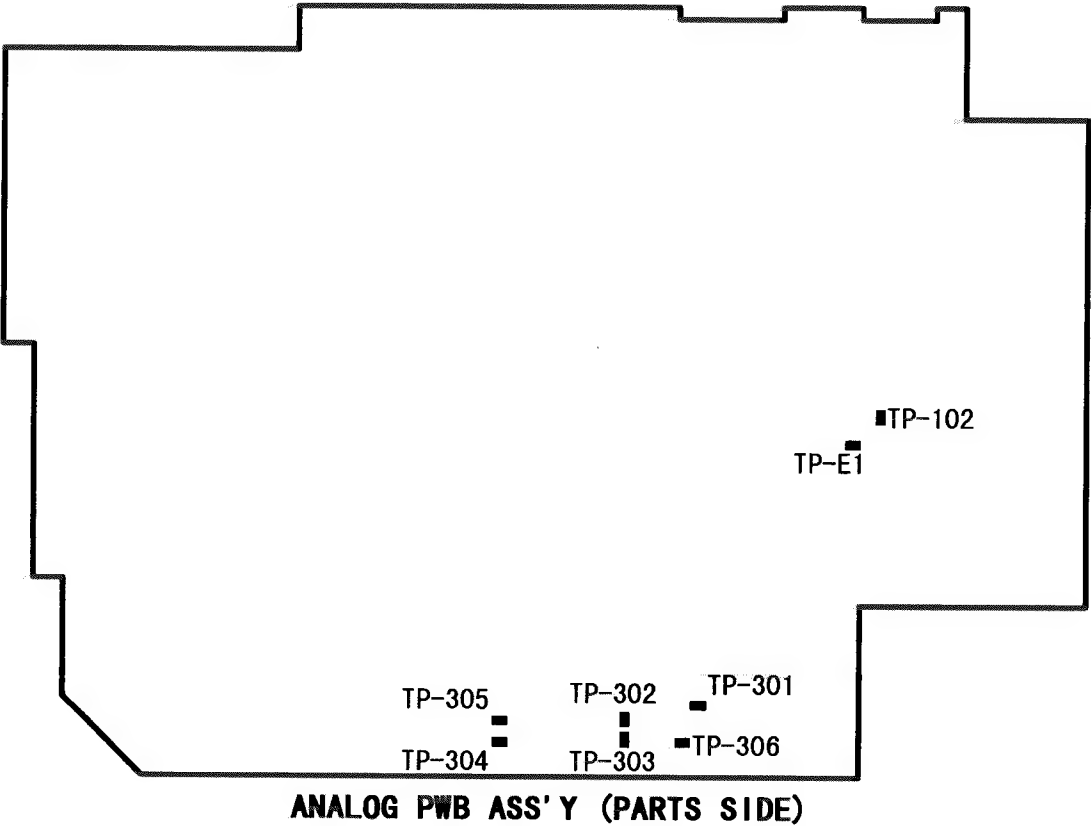


2SA1795-W  
2SC4668-W



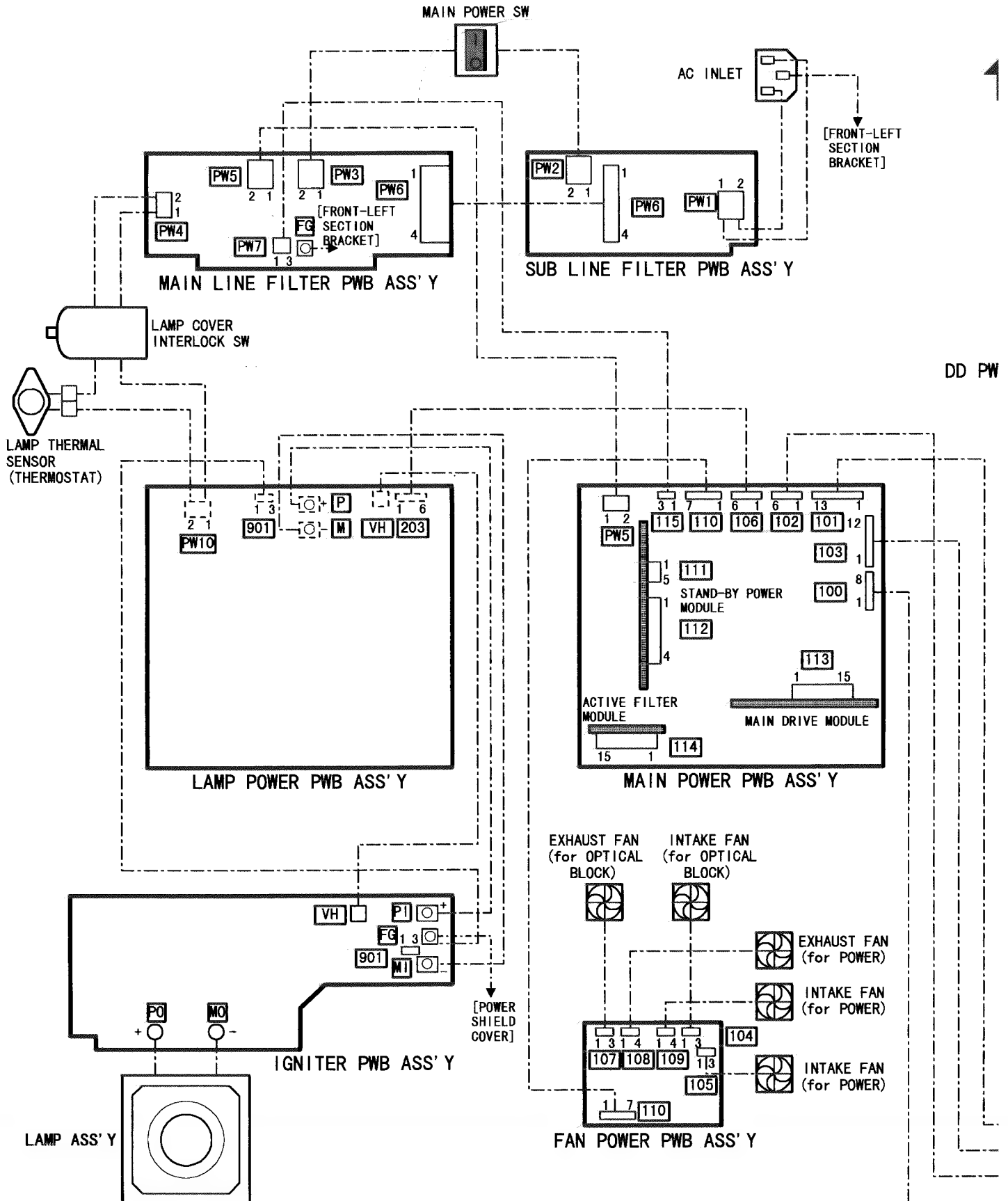
2SA1037AK/QR/-X  
2SA1162/YG/-X  
2SC1740S/QR/-T  
2SC2412K/QR/-X  
2SC3751/KLM/  
2SC4061K/NP/-X  
DTC114EKA-X  
DTC123YKA-X  
DTC143XKA-X

TEST POINTS LOCATION

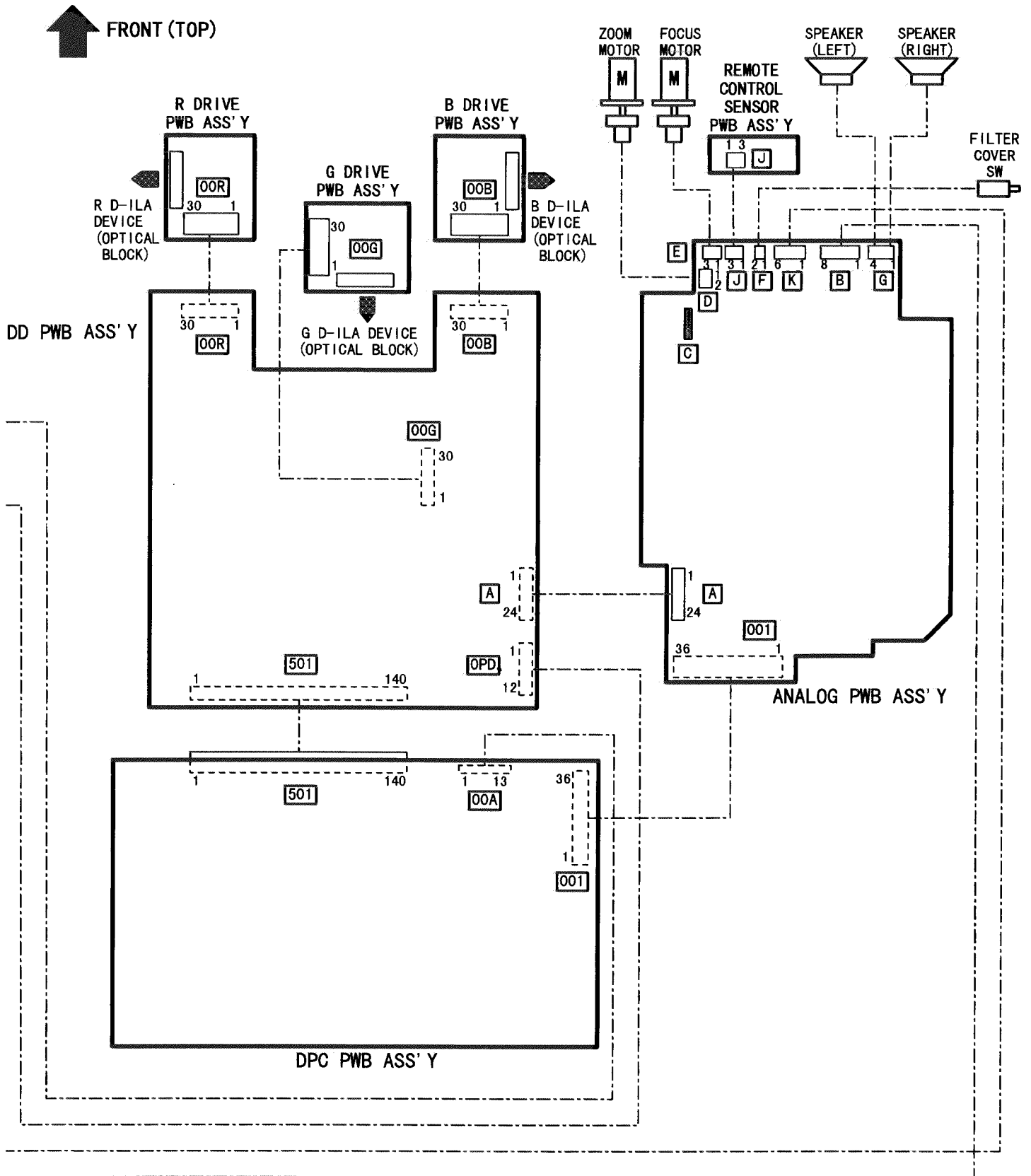




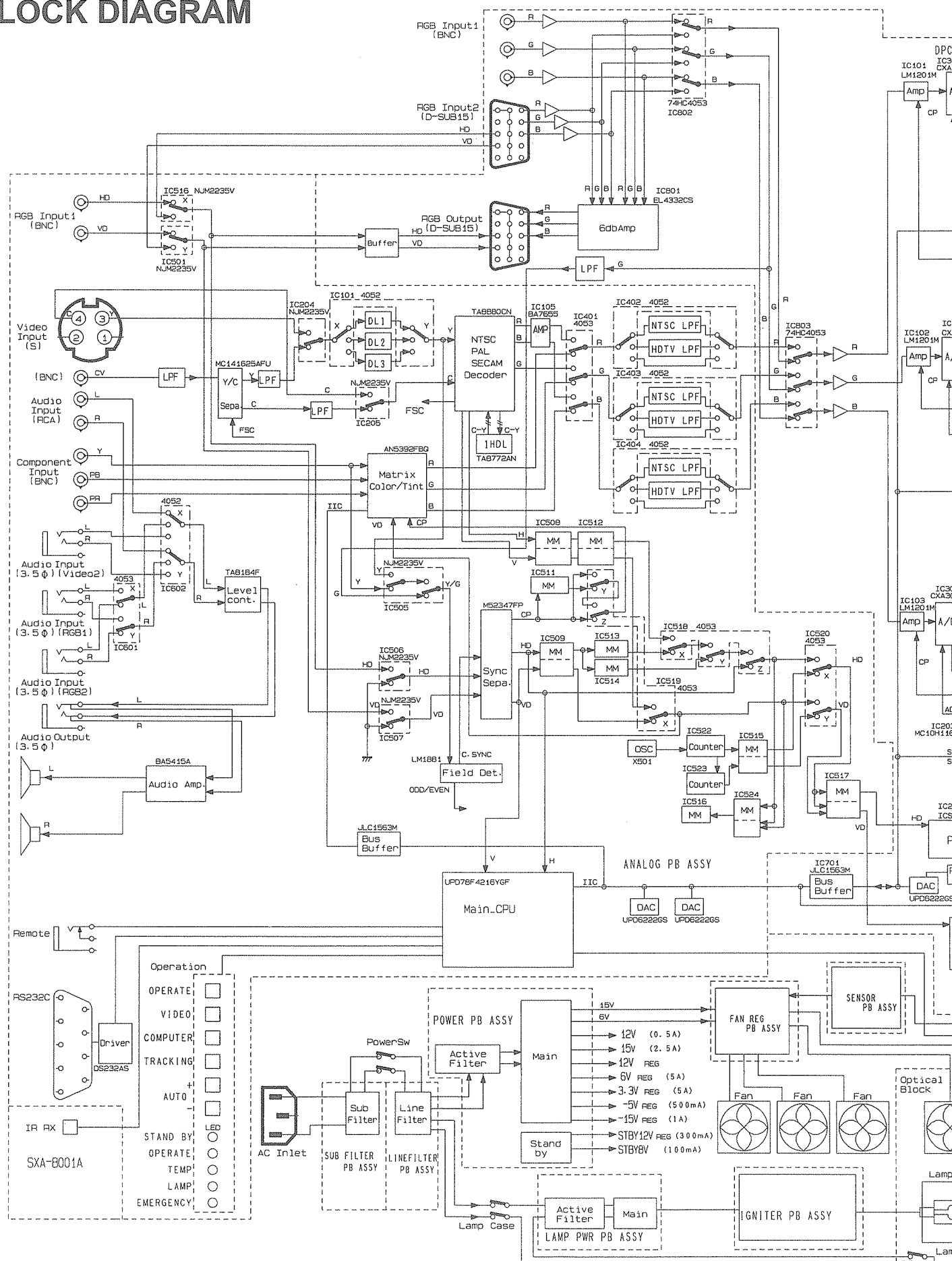
# WIRING DIAGRAM



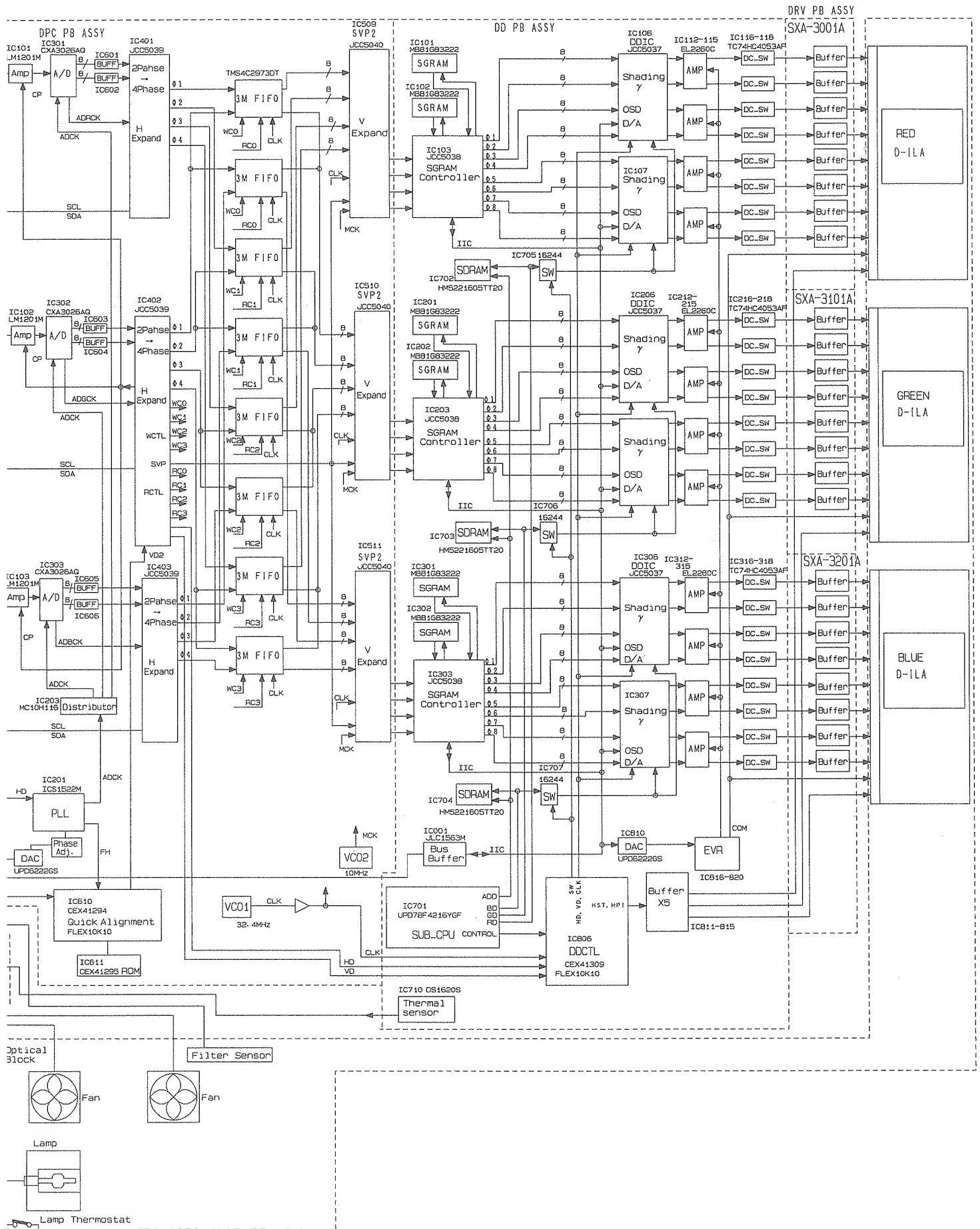




# BLOCK DIAGRAM

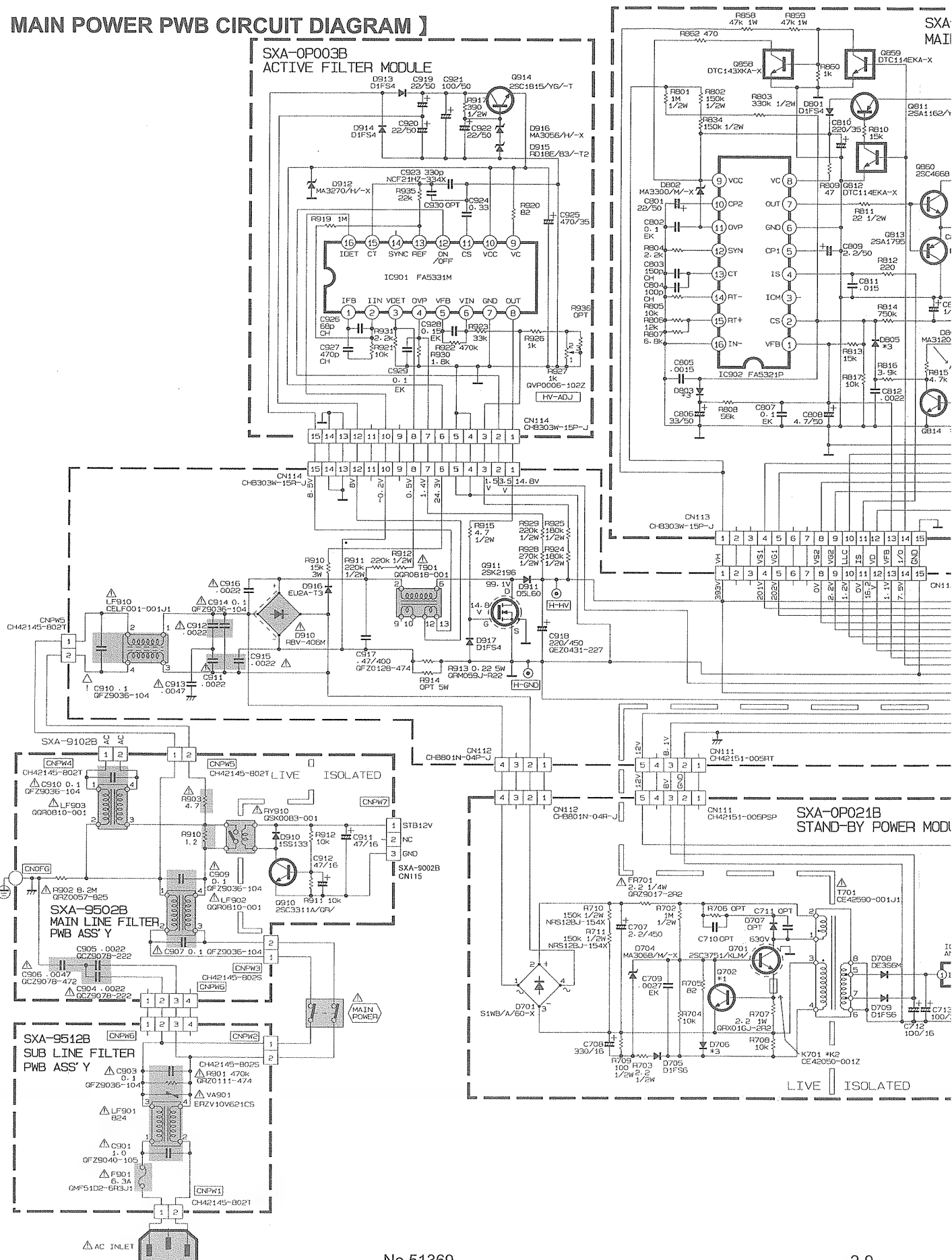


DLA-G10E  
DLA-G10EK



# CIRCUIT DIAGRAMS & PWB PATTERNS

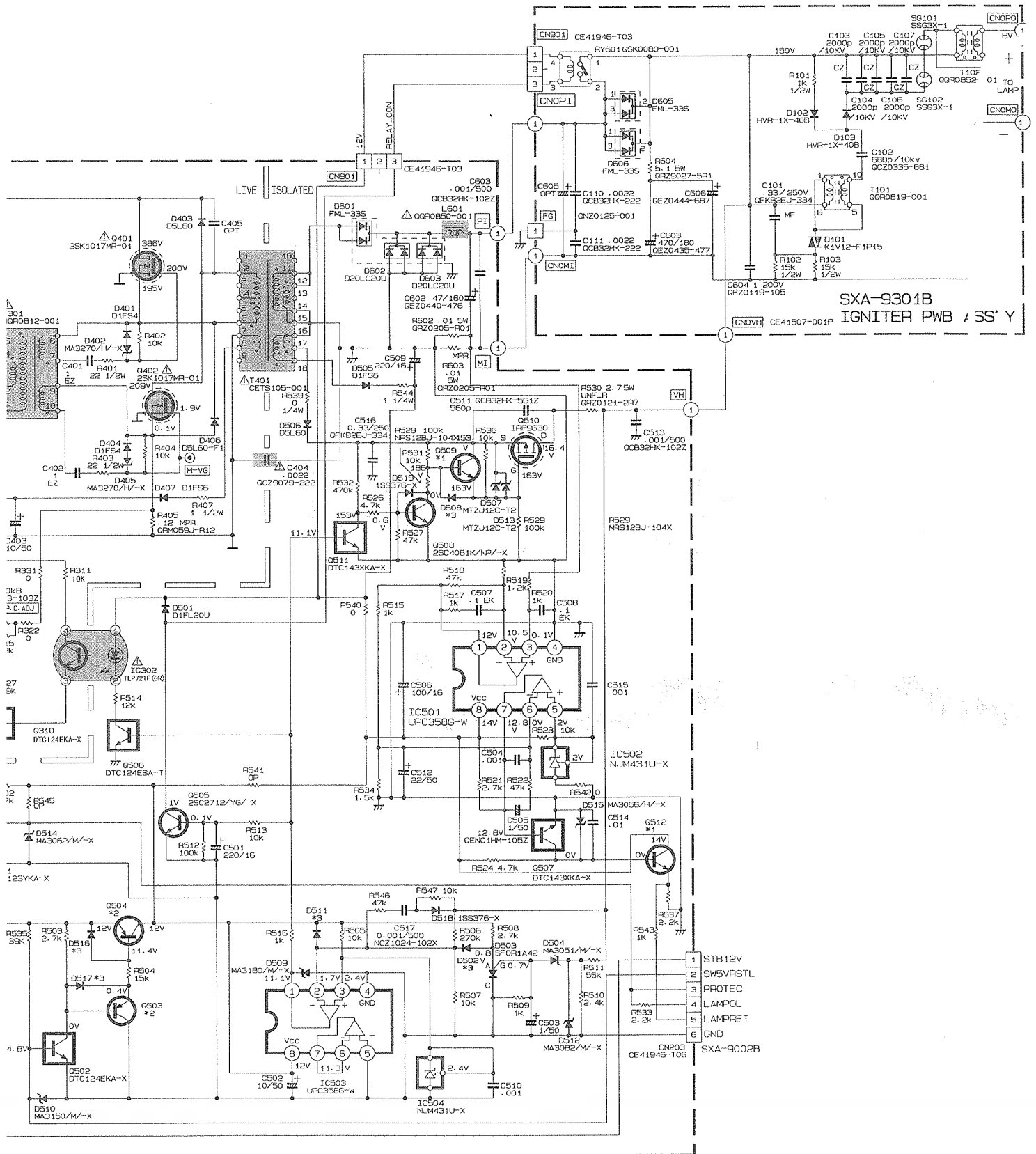
## [ MAIN POWER PWB CIRCUIT DIAGRAM ]



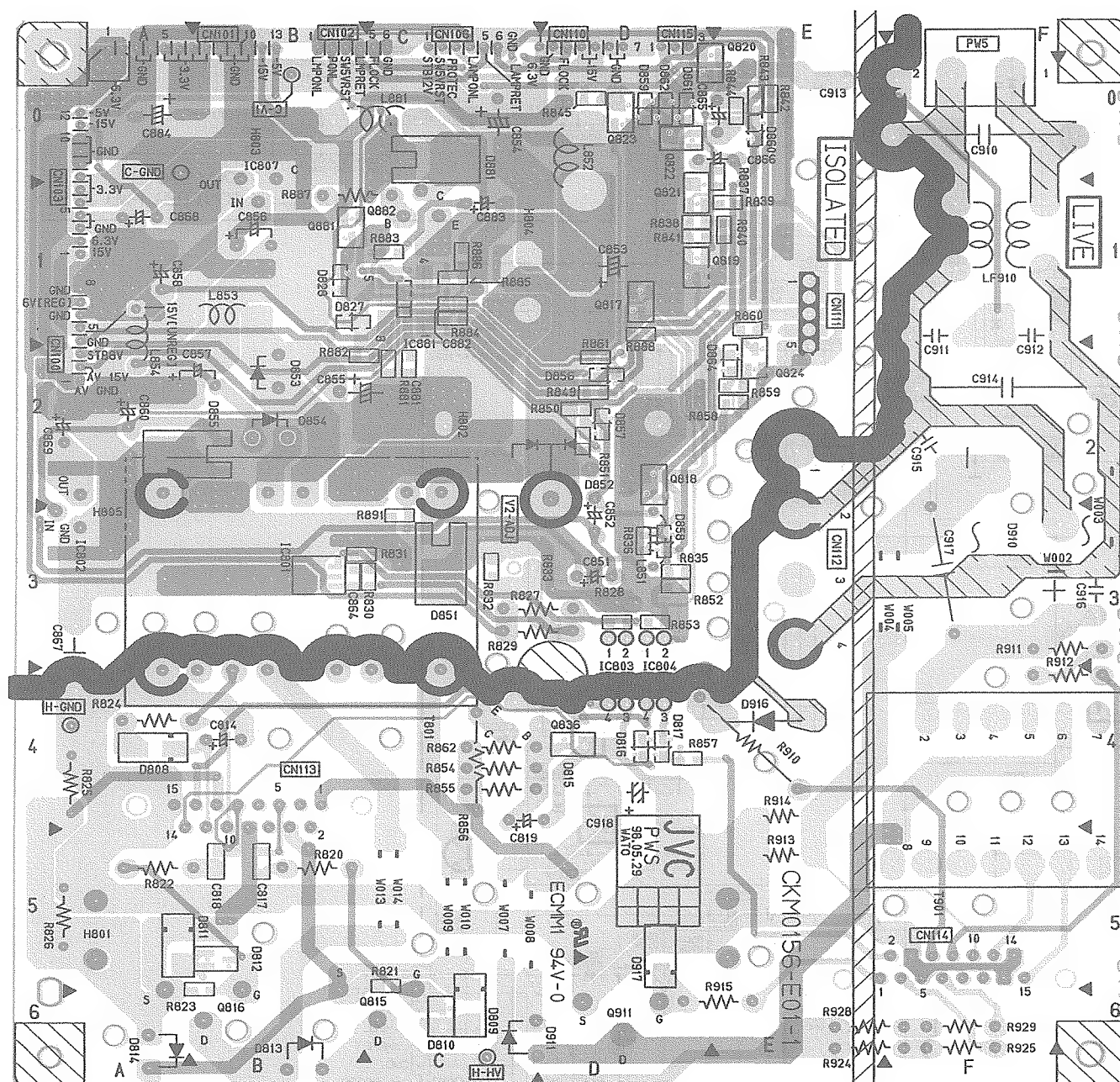
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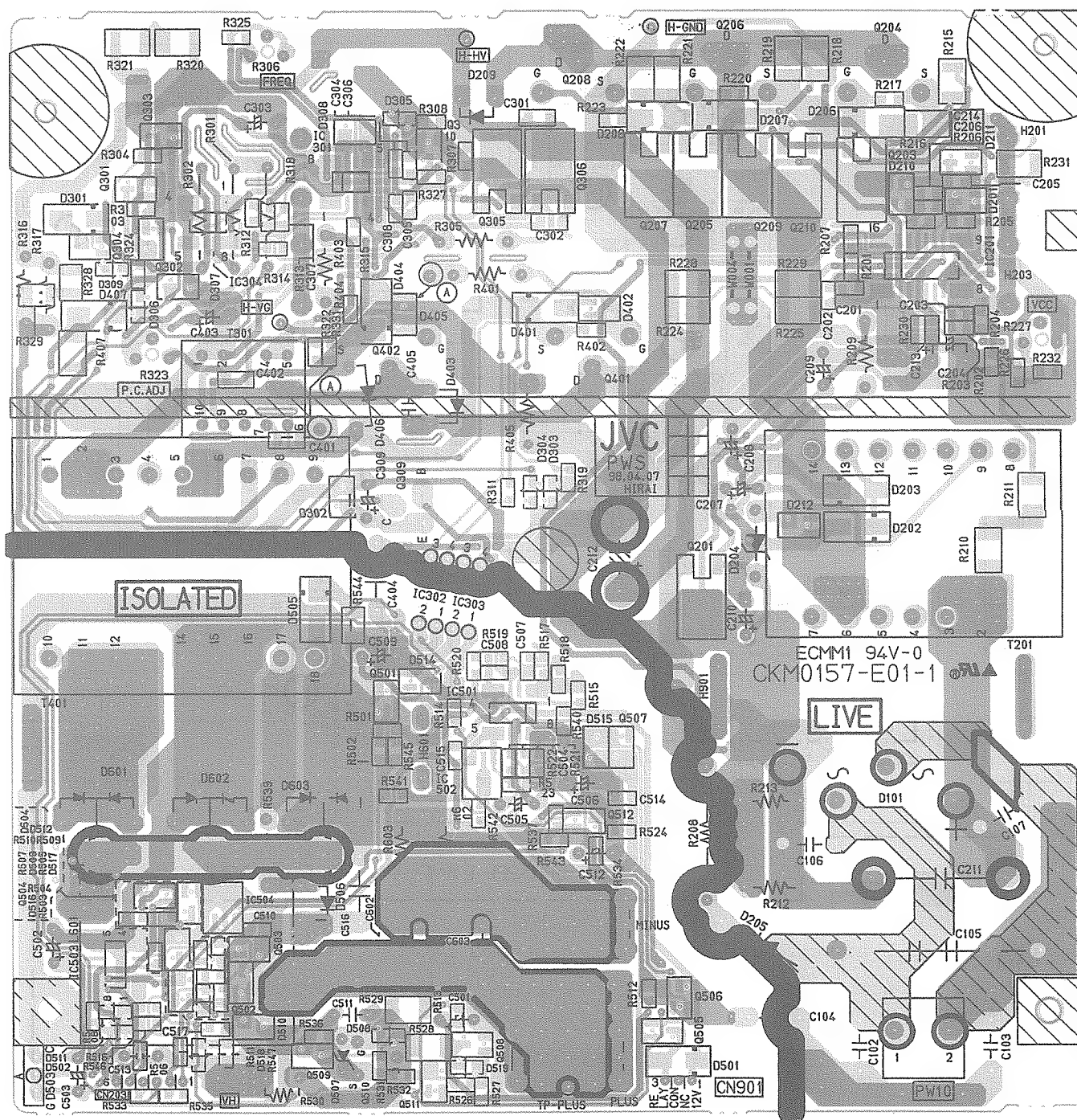
DLA-G10E  
DLA-G10EK



【 MAIN POWER PWB PATTERN 】







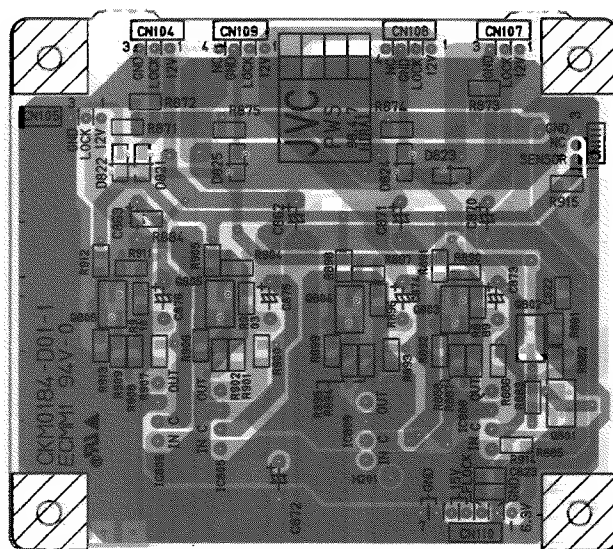
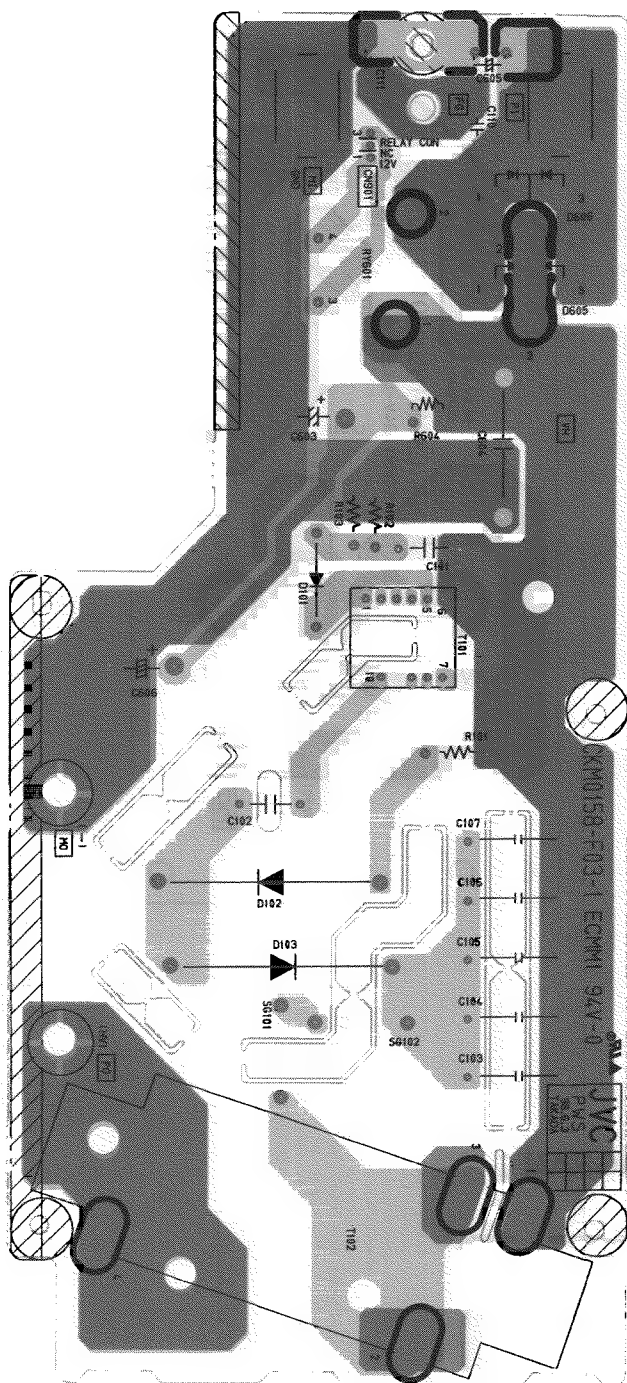


【 IGNITER PWB PATTERN 】

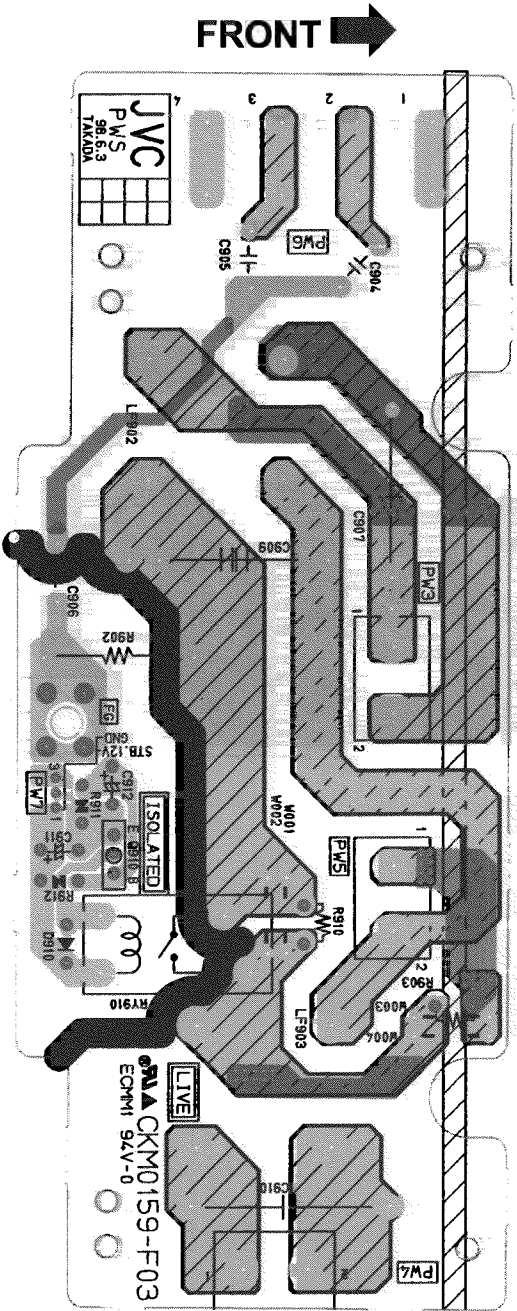
【 FAN POWER PWB PATTERN 】

←  
FRONT

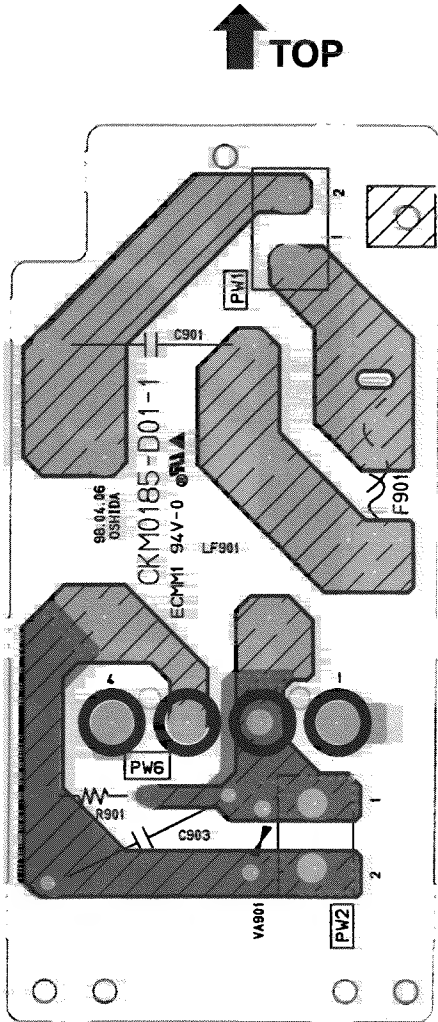
↑  
TOP



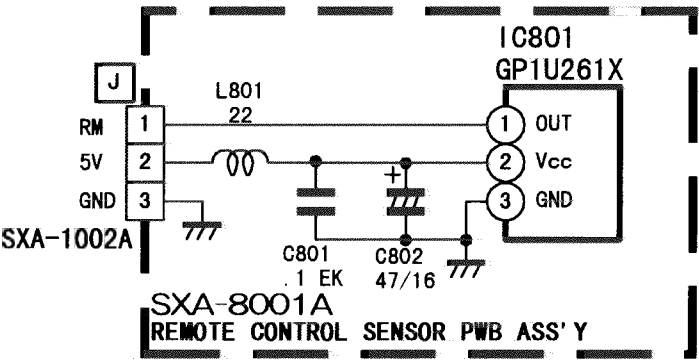
【 MAIN LINE FILTER PWB PATTERN 】



【 SUB LINE FILTER PWB PATTERN 】



【 REMOTE CONTROL SENSOR PWB CIRCUIT DIAGRAM 】



# PARTS LIST

## CAUTION

- The parts identified by the  $\Delta$  symbol are important for the safety . Whenever replacing these parts, be sure to use specified ones to secure the safety .
- The parts not indicated in this Parts List and those which are filled with lines --- in the Parts No. columns will not be supplied .
- P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied .

## ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
$\pm 1\%$	$\pm 2\%$	$\pm 5\%$	$\pm 10\%$	$\pm 20\%$	$\pm 30\%$	+30% -10%	+50% -10%	+80% -20%	+100% 0%

## CONTENTS

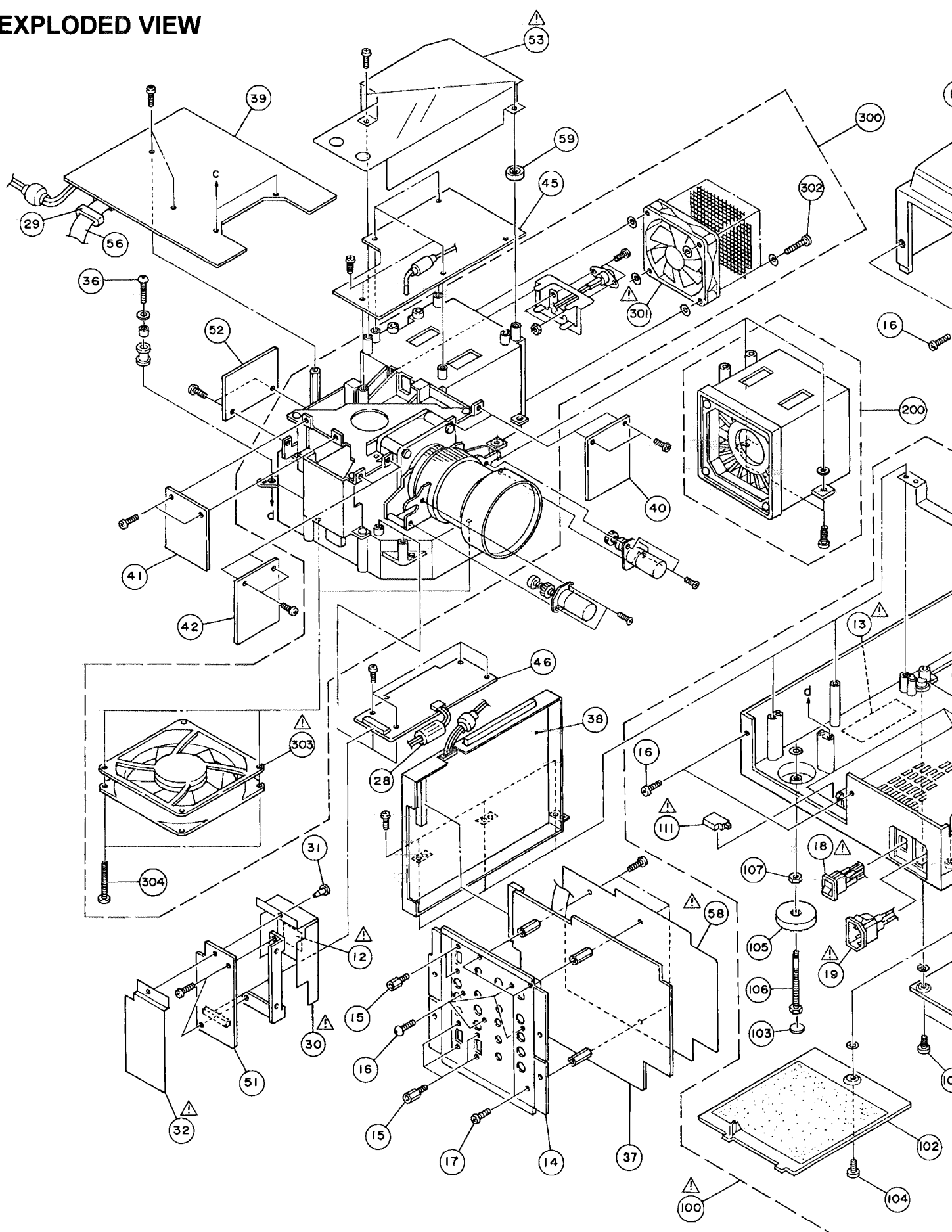
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● DPC PW BOARD ASS'Y (SXA-1201A) .....	3-6
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● MAIN POWER PW BOARD ASS'Y (SXA-9001B) .....	3-6
● LAMP POWER PW BOARD ASS'Y (SXA-9102B) .....	3-7
● IGNITER PW BOARD ASS'Y (SXA-9301B) .....	3-9
● FAN POWER PW BOARD ASS'Y (SXA-9201B) .....	3-9
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■ PACKING PARTS LIST .....	3-10

### USING P.W. BOARD & REMOTE CONTROL UNIT

P.W.B ASS'Y \ Model	DLA-G10E / DLA-G10EK
ANALOG P.W.B	SXA-1002A
DPC P.W.B	SXA-1201A
DD P.W.B	SXA-1301A
R DRIVE P.W.B	SXA-3001A
G DRIVE P.W.B	SXA-3101A
B DRIVE P.W.B	SXA-3201A
MAIN POWER P.W.B	SXA-9001B
LAMP POWER P.W.B	SXA-9102B
IGNITER P.W.B	SXA-9301B
MAIN LINE FILTER P.W.B	SXA-9502B
REMOTE CONTROL SENSOR P.W.B	SXA-8001A
STAND-BY POWER MODULE	SXA-0P021B
MAIN DRIVE MODULE	SXA-0P002B
ACT-FILTER MODULE	SXA-0P003B
SUB LINE FILTER P.W.B	SXA-9512B
FAN POWER P.W.B	SXA-9201B
REMOTE CONTROL UNIT	RM-M10G

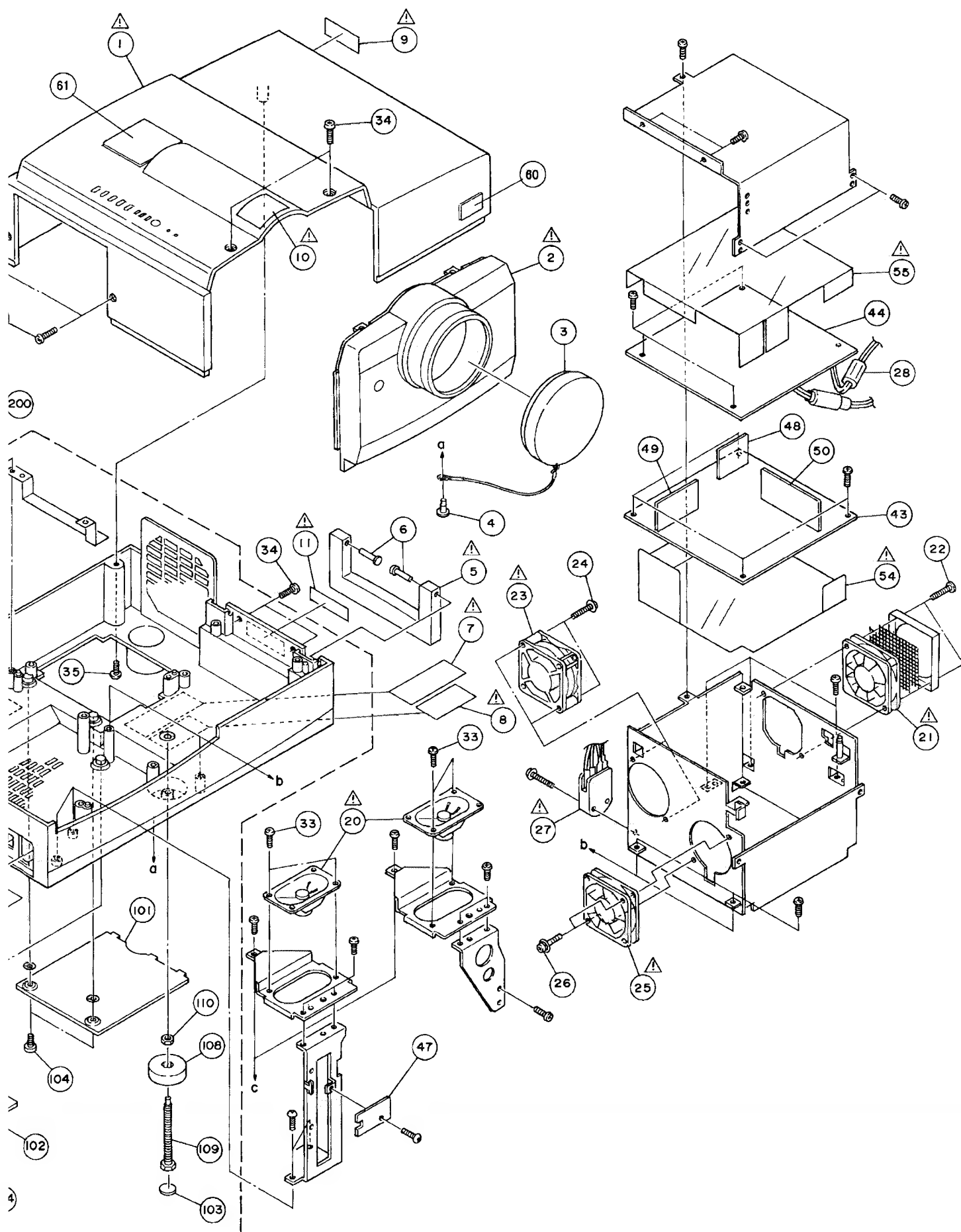


# EXPLODED VIEW





DLA-G10E  
DLA-G10EK





## EXPLODED VIEW PARTS LIST

△ Ref.No.	Part No.	Part Name	Description	Local
△ 1	LC20045-011A	TOP COVER ASSY		
△ 2	LC20055-005A	COVER (LENS) ASS		
3	LC30408-001A	CAP ASS'Y		
4	BHD0068	RIBET		
△ 5	BHQ20016-4	HANDLE		
6	LC40053-001A	SHAFT	×2	
△ 7	LC30330-001B	LABEL E(L CAUTION)		
△ 8	LC30331-001B	LABEL E(L CAUTION)		
△ 9	LC30502-001A	LABEL (DO CATION)		
△ 10	LC30332-001A	LABEL E(L CAUTION)		
△ 11	LC30334-004A	RATING LABEL		
△ 12	LC40213-001A	LABEL(FUSE CAUTION)		
△ 13	LC30329-001D	LABEL E(L CAUTION)		
14	LC30220-001C	TERMINAL BOARD		
15	QNB0081-001	NAT	×6	
16	SDSP3006N	SCREW	×8	
17	SBSG3008N	TAPPING SCREW	×4	
△ 18	QSW0699-001	SEESAW SWITCH		
△ 19	QMCB004-001	3P INLET		
△ 20	QAS0011-001	SPEAKER	×2	
△ 21	QAR0055-001	FAN MOTOR 60		
22	SDSP3020M	SCREW	×2	
△ 23	QAR0044-001	FAN MOTOR 60		
24	DPSP3030Z	ASSY SCREW	×2	
△ 25	QAR0056-001	FAN MOTOR 60		
26	DPSP3025Z	ASSY SCREW	×2	
△ 27	QSW0700-001	PUSH SWITCH		
28	QQR0491-001	FILTER	×2	
29	QQR0925-001	CORE		
△ 30	LC30320-001A	SHEET(F.SUB.PWB)		
31	BHD0068	RIBET		
△ 32	LC40178-001A	COVER(F.SUB.PWB)		
33	SBSG3008Z	TAPPING SCREW	×3	
34	SDSP4010N	SCREW	×4	
35	SBSG4012Z	TAP SCREW		
36	LC40194-001A	SPECIAL SCREW	×6	
37	SXA-1002A	ANALOG PB		
38	SXA-1201A	DPC PB AS		
39	SXA-1301A	DD PB ASS		
40	SXA-3001A	R DRV PB		
41	SXA-3101A	G DRV PB		
42	SXA-3201A	B DRV PB		
43	-----	POWER PB	SXA-9001B	
44	-----	LAMP PRW	SXA-9102B	
45	-----	IGNITOR P	SXA-9301B	
46	-----	LINE FILT	SXA-9502B	
47	-----	FRONT PB	SXA-8001A	
48	SXA-0P021B	STAND BY		
49	SXA-0P002B	MAIN DRIV		
50	SXA-0P003B	ACT-FIL P		
51	-----	SUB FILTE	SXA-9512B	
52	-----	FAN REG P	SXA-9201B	
△ 53	LC30234-001B	COVER (IGUNAITA)		
△ 54	LC30222-001D	COVER SHEET		
△ 55	LC30223-001B	SHEET		
56	QUQ410-2408CC	FFC WIRE ASS'Y		
57	LC40230-001A	COVER(PS FAN NET		
△ 58	LC30409-001B	SHIELD (ANALOG)		
59	LC40269-001A	PB STOPPER		
60	PGD30011-1	JVC MARK		
61	LC30219-001A	NAME PLATE		
△ 100	LC20042-001G	B.CHASSIS ASSY	Inc.No.101~111	
101	LC30207-001C	COVER LAMP ASSY		
102	LC20043-001C	COVER		
103	BHQ40041-3	FOOT (L)	×3	
104	BHD0055	NUT (BUSH) M4	×3	
105	BHQ30109-2	FOOT R		
106	LC40049-001A	BOLT (FOOT) M5		
107	NTS5000R	NUT		
108	BHQ30108-2	FOOT F		
109	LC40050-001A	BOLT (FOOT) M8		
110	NTS8000R	NUT (FOOT)		
111	QSW0701-001	PUSH SWITCH		
200	G10-LAMP-SU	SERVICE L		
300	DLA-G10-OPSA	OPTICS SA	Inc.No.301~304	
△ 301	QAR0059-001	FAN MOTOR 90		
302	SDSP4040M	SCREW	×4	
△ 303	QAR0042-001	FAN MOTOR 120		
304	SDSP4035M	SCREW	×2	

## PRINTED WIRING BOARD PARTS LIST

## ANALOG P.W. BOARD ASS'Y (SXA-1002A)

The following PC boards are supplied as assemblies.

The component parts on the PC board are available only when the parts are listed in the "PRINTED CIRCUIT BOARD PARTE LIST".

Symbol No.	Part No.	Part Name	Description	Local
<b>OTHERS</b>				
J1001	QMC008-C01	DIN JACK		
J1003	CEMB018-001	BNC CONNECTOR		
J1004-05	QMS3005-C01	3.5 JACK		
J1006	QNN0202-002	PIN JACK		
J1007	QNN0202-001	PIN JACK		
J1010	QMS3005-C01	3.5 JACK		
J1011	CEMB010-004	BNC CONNECTOR		
J1012	CEMB019-001	BNC CONNECTOR		
J1014	QMS3005-C01	3.5 JACK		
S1701	CE50004-001	DIP SWITCH		
S1831-36	QSP4H11-C17	PUSH SWITCH		

## DPC P.W. BOARD ASS'Y (SXA-1201A)

The following PC boards are supplied as assemblies.

The component parts on the PC board are available only when the parts are listed in the "PRINTED CIRCUIT BOARD PARTE LIST".

Symbol No.	Part No.	Part Name	Description	Local
<b>OTHERS</b>				
J1001	QNZ0102-001	D SUB CONNECT		
J1002	QNZ0154-001	3P BNC CONNECT		
J1003	QNZ0102-001	D SUB CONNECT		

REMOTE CONTROL SENSOR P.W.BOARD ASS'Y  
(SXA-8001A)

Symbol No.	Part No.	Part Name	Description	Local
<b>CAPACITOR</b>				
C8801	NCB21EK-104X	C CAP	0.1 $\mu$ F 25V K	
C8802	NEH71CM-476X	E CAP	47 $\mu$ F 16V M	
<b>COIL</b>				
L8801	NQL024J-220X	COIL		22 $\mu$ H
<b>IC</b>				
IC8801	GP1U261X	IR DETECT UNIT		

## MAIN POWER P.W.BOARD ASS'Y(SXA-9001B)

Symbol No.	Part No.	Part Name	Description	Local
<b>VARIABLE RESISTOR</b>				
P9833	QVP0053-103Z	V R		10k $\Omega$
<b>RESISTOR</b>				
R9820	QRE121J-220Y	C R		22 $\Omega$ 1/2W J
R9821	NRSA02J-103X	MG R		10k $\Omega$ 1/10W J
R9822	QRE121J-220Y	C R		22 $\Omega$ 1/2W J
R9823	NRSA02J-103X	MG R		10k $\Omega$ 1/10W J
R9824	QRN141J-0R0Y	C R		0.0 $\Omega$ 1/4W J
R9826	QRM059J-R47	MP R		0.47 $\mu$ F 5W J
R9827	QRE121J-560Y	C R		56 $\Omega$ 1/2W J
R9828	NRSA02J-222X	MG R		2.2k $\Omega$ 1/10W J
R9829	QRE121J-222Y	C R		2.2k $\Omega$ 1/2W J
R9830	NRSA02J-684X	MG R		680k $\Omega$ 1/10W J
R9831	NRSA02J-223X	MG R		22k $\Omega$ 1/10W J
R9832	NRSA02J-332X	MG R		3.3k $\Omega$ 1/10W J
R9835-36	NRSA02J-222X	MG R		2.2k $\Omega$ 1/10W J
R9837	NRSA02J-103X	MG R		10k $\Omega$ 1/10W J
R9838	NRSA02J-104X	MG R		100k $\Omega$ 1/10W J
R9839	NRSA02J-682X	MG R		6.8k $\Omega$ 1/10W J
R9840	NRSA02J-473X	MG R		47k $\Omega$ 1/10W J
R9841	NRSA02J-472X	MG R		4.7k $\Omega$ 1/10W J
R9842	NRSA02J-682X	MG R		6.8k $\Omega$ 1/10W J
R9843	NRSA02J-562X	MG R		5.6k $\Omega$ 1/10W J
R9844	NRSA02J-222X	MG R		2.2k $\Omega$ 1/10W J
R9845	NRSA02J-103X	MG R		10k $\Omega$ 1/10W J
R9849	NRSA02J-103X	MG R		10k $\Omega$ 1/10W J
R9850	NRSA02J-272X	MG R		2.7k $\Omega$ 1/10W J
R9851	NRSA02J-122X	MG R		1.2k $\Omega$ 1/10W J
R9852	NRSA02J-472X	MG R		4.7k $\Omega$ 1/10W J
R9853	NRSA02J-182X	MG R		1.8k $\Omega$ 1/10W J
R9854	QRE121J-394Y	C R		390k $\Omega$ 1/2W J
R9855	QRE121J-474Y	C R		470k $\Omega$ 1/2W J
R9856	QRL029J-393	GM R		39k $\Omega$ 2W J
R9857	NRSA02J-123X	MG R		12k $\Omega$ 1/10W J
R9861	NRSA02J-822X	MG R		8.2k $\Omega$ 1/10W J
R9862	QRE121J-474Y	C R		470k $\Omega$ 1/2W J
R9881	NRSA02J-333X	MG R		33k $\Omega$ 1/10W J
R9882	NRSA02J-334X	MG R		330k $\Omega$ 1/10W J
R9883	NRSA02J-184X	MG R		180k $\Omega$ 1/10W J
R9884	NRSA02J-331X	MG R		330 $\Omega$ 1/10W J
R9885	NRSA02J-122X	MG R		1.2k $\Omega$ 1/10W J
R9886	NRSA02J-682X	MG R		6.8k $\Omega$ 1/10W J
R9887	QRE121J-680Y	C R		68 $\Omega$ 1/2W J
R9888	NRSA02J-103X	MG R		10k $\Omega$ 1/10W J
R9891	NRSA02J-150X	MG R		15 $\Omega$ 1/10W J
R9910	QRL039J-153	GM R		15k $\Omega$ 3W J
R9911-12	QRE121J-224Y	C R		220k $\Omega$ 1/2W J
R9913	QRM059J-R22	MP R		
R9915	QRE121J-4R7Y	C R		4.7 $\Omega$ 1/2W J
R9924-25	QRE121J-184Y	C R		180k $\Omega$ 1/2W J
R9928	QRE121J-274Y	C R		270k $\Omega$ 1/2W J
R9929	QRE121J-224Y	C R		220k $\Omega$ 1/2W J
<b>CAPACITOR</b>				
C9814	QEHRI1M-106Z	E CAP		10 $\mu$ F 50V M
C9817-18	NCF11EZ-105X	C CAP		1 $\mu$ F 25V Z
C9819	QEHRI1M-106Z	E CAP		10 $\mu$ F 50V M
C9851-52	QEHRI1M-107Z	E CAP		100 $\mu$ F 35V M
C9853	CEX41419-001	E CAPACITOR		
C9854	QEBH1CM-338	E CAP		3300 $\mu$ F 16V M
C9855	QEBH1EM-478	E CAP		4700 $\mu$ F 25V M
C9856-57	QEHRIEM-477Z	E CAP		470 $\mu$ F 25V M
C9858	QEHRIEM-107Z	E CAP		100 $\mu$ F 25V M
C9860	QEHRI1CM-477Z	E CAP		470 $\mu$ F 16V M
C9864	NCB21HK-473X	C CAP		0.047 $\mu$ F 50V K
C9865	QEHRI1M-335Z	E CAP		3.3 $\mu$ F 50V M
C9866	QTNIC1CM-106Z	E CAPACITOR		
C9867	QCZ9079-102	C CAP		
C9868	QEHRIEM-337Z	E CAP		330 $\mu$ F 25V M
C9869	QEHRIAM-477Z	E CAP		470 $\mu$ F 10V M
C9881	NCB21HK-102X	C CAP		1000pF 50V K
C9882	NCB21HK-472X	C CAP		4700pF 50V K
C9883	QEHRI1M-475Z	E CAP		4.7 $\mu$ F 50V M
C9884	QEBH1AM-478	E CAP		4700 $\mu$ F 10V M
C9910	QFZ9036-104	M F CAPACITOR		
C9914	QFZ9036-104	M F CAPACITOR		0.1 $\mu$ FAC250V M
C9915	QCZ9078-222	C CAP		
C9917	QFZ0128-474	M F CAPACITOR		0.47 $\mu$ F 400V $\pm$ 3%
C9918	QEZO431-227	E CAPACITOR		

Δ Symbol No. Part No. Part Name Description Local

**TRANSFORMER**

Δ T9801 CETS099-002 SE TRANS.  
T9901 QQR0818-001 CHOKE COIL

**COIL**

L9851 QQLZ018-500 HEATER CHOKE  
L9852 QQR0851-001 CHOKE COIL  
L9853-54 QQLZ018-500 HEATER CHOKE  
L9881 QQR0811-001 CHOKE COIL

**DIODE**

D9808 D1F56-X CHIP DIODE  
D9809 D1F54-X CHIP DIODE  
D9810 MA3270/H/-X CHIP ZENER DIODE  
D9811 D1F54-X CHIP DIODE  
D9812 MA3270/H/-X CHIP ZENER DIODE  
D9813-14 D5L60 SI DIODE  
D9815 MA3120/M/-X ZENER DIODE  
D9816-17 MA111-X SI DIODE  
  
D9827-28 MA111-X SI DIODE  
D9851 DE356M-W CHIP DIODE  
D9852 ESAC83M-004 SI DIODE  
D9853-54 ERC80M-006 SI DIODE  
D9855 DE356M-W CHIP DIODE  
D9856-63 MA111-X SI DIODE  
D9881 DE55C3ML-W CHIP DIODE  
Δ D9910 RBV-406M BRIDGE DIODE  
  
D9911 D5L60 SI DIODE  
D9916 EU2A-T3 SI DIODE  
D9917 D1F54-X CHIP DIODE

**TRANSISTOR**

Q9815 25K1017MR-01 FET  
Q9816 25K1017MR-01 FET  
Q9817 DTC143XKA-X CHIP TRANSISTOR  
Q9818 DTC114EKA-X CHIP TRANSISTOR  
Q9819-20 25C2412K/QR/-X SI TRANSISTOR  
Q9821 25A1037AK/QR/-X SI TRANSISTOR  
Q9822 DTC114YKA-X CHIP TRANSISTOR  
Q9823 DTC143XKA-X CHIP TRANSISTOR  
  
Q9836 25C3751/KLM/- SI TRANSISTOR  
Q9881 25A1162/YG/-X SI TRANSISTOR  
Q9882 25A1471/R/- SI TRANSISTOR  
Q9911 25K2196 FET

**IC**

IC9801 NJM431U-X I C  
IC9802 TA790055 I C  
Δ IC9803 TLP721F(GR) I C (PH. COUPLER)  
Δ IC9804 TLP721F(GR) I C (PH. COUPLER)  
IC9807 AN7915F I C  
IC9881 FA7612CN-X I C

**OTHERS**

Δ K9851 QQR0867-001 FERRITE CORE  
Δ LF9910 CELF001-001J1 LINE FILTER

**LAMP POWER P.W.BOARD ASS'Y(SXA-9102B)**

Δ Symbol No. Part No. Part Name Description Local

**VARIABLE RESISTOR**

R9227 QVP0053-102Z V R 1kΩ  
R9306 QVP0053-103Z V R 10kΩ  
R9323 QVP0053-103Z V R 10kΩ

**RESISTOR**

R9201 NRS402J-103X MG R 10kΩ 1/10W J  
R9202 NRS402J-222X MG R 2.2kΩ 1/10W J  
R9203 NRS402J-474X MG R 470kΩ 1/10W J  
R9204 NRS402J-333X MG R 33kΩ 1/10W J  
R9205 NRS402J-820X MG R 82Ω 1/10W J  
R9206 NRS402J-223X MG R 22kΩ 1/10W J  
R9207 NRS402J-105X MG R 1MΩ 1/10W J  
R9208 QRL039J-153 OM R 15kΩ 3W J  
  
R9209 QRE121J-391Y C R 390Ω 1/2W J  
R9210-11 NRS12BJ-224X CHIP RESISTOR 220kΩ 1/2W J  
R9212 QRM059J-R10 MP R  
R9215 NRS12BJ-220X CHIP RESISTOR  
R9216 NRS12BJ-472X C R  
R9217 NRS402J-474X MG R 470kΩ 1/10W J  
R9218 NRS12BJ-220X CHIP RESISTOR  
R9219 NRS12BJ-472X C R  
  
R9220 NRS402J-474X MG R 470kΩ 1/10W J  
R9221 NRS12BJ-220X CHIP RESISTOR  
R9222 NRS12BJ-472X C R  
R9223 NRS402J-474X MG R 470kΩ 1/10W J  
R9224-25 NRS12BJ-184X C R  
R9226 NRS402J-122X MG R 1.2kΩ 1/10W J  
R9228 NRS12BJ-274X C R  
R9229 NRS12BJ-224X CHIP RESISTOR  
  
R9230 NRS402J-182X MG R 1.8kΩ 1/10W J  
R9231 NRS12BJ-220X CHIP RESISTOR  
R9232 NRS402J-471X MG R 470Ω 1/10W J  
R9301-02 QRG016J-473 OM R 47kΩ 1W J  
R9303 NRS402J-272X MG R 2.7kΩ 1/10W J  
R9304 NRS402J-153X MG R 15kΩ 1/10W J  
R9305 QRE121J-4R7Y C R 4.7Ω 1/2W J  
R9307 NRS402J-473X MG R 47kΩ 1/10W J  
  
R9308 NRS402J-272X MG R 2.7kΩ 1/10W J  
R9311 NRS402J-102X MG R 1kΩ 1/10W J  
R9312 NRS402J-154X MG R 150kΩ 1/10W J  
R9313 NRS402J-392X MG R 3.9kΩ 1/10W J  
R9314 NRS402J-152X MG R 1.5kΩ 1/10W J  
R9315 NRS402J-392X MG R 3.9kΩ 1/10W J  
R9316 QRE121J-394Y C R 390kΩ 1/2W J  
R9317 QRE121J-474Y C R 470kΩ 1/2W J  
  
R9318 QRL029J-393 OM R 39kΩ 2W J  
R9319 NRS402J-123X MG R 12kΩ 1/10W J  
R9320-21 NRS12BJ-154X CHIP RESISTOR  
R9324 NRS402J-471X MG R 470Ω 1/10W J  
R9325 NRS402J-223X MG R 22kΩ 1/10W J  
R9327 NRS402J-392X MG R 3.9kΩ 1/10W J  
R9328 NRS144J-224X CHIP RESISTOR  
R9329 NRS144J-274X CHIP RESISTOR  
  
R9401 QRE121J-220Y C R 22Ω 1/2W J  
R9402 NRS402J-103X MG R 10kΩ 1/10W J  
R9403 QRE121J-220Y C R 22Ω 1/2W J  
R9404 NRS402J-103X MG R 10kΩ 1/10W J  
R9405 QRM059J-R12 MP R 0.12Ω 5W J  
R9407 NRS12BJ-1R0X C R 1Ω 1/2W J  
R9501 NRS402J-182X MG R 1.8kΩ 1/10W J  
R9502 NRS402J-472X MG R 4.7kΩ 1/10W J  
  
R9503 NRS402J-272X MG R 2.7kΩ 1/10W J  
R9504 NRS402J-153X MG R 15kΩ 1/10W J  
R9505 NRS402J-103X MG R 10kΩ 1/10W J  
R9506 NRS402J-274X MG R 270kΩ 1/10W J  
R9507 NRS402J-103X MG R 10kΩ 1/10W J  
R9508 NRS402J-272X MG R 2.7kΩ 1/10W J  
R9509 NRS402J-102X MG R 1kΩ 1/10W J  
R9510 NRS402J-332X MG R 3.3kΩ 1/10W J  
  
R9511 NRS402J-563X MG R 56kΩ 1/10W J  
R9512 NRS402J-104X MG R 100kΩ 1/10W J  
R9513 NRS402J-103X MG R 10kΩ 1/10W J  
R9514 NRS402J-123X MG R 12kΩ 1/10W J  
R9515 NRS402J-102X MG R 1kΩ 1/10W J  
R9517 NRS402J-102X MG R 1kΩ 1/10W J  
R9518 NRS402J-473X MG R 47kΩ 1/10W J  
R9519 NRS402J-122X MG R 1.2kΩ 1/10W J

DLA-G10E  
DLA-G10EK

△ Symbol No. Part No. Part Name Description Local

RESISTOR

R9520	NRSA02J-102X	MG R	1kΩ 1/10W J
R9521	NRSA02J-272X	MG R	2.7kΩ 1/10W J
R9522	NRSA02J-473X	MG R	47kΩ 1/10W J
R9523	NRSA02J-103X	MG R	10kΩ 1/10W J
R9524	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R9526	NRSA02J-472X	MG R	4.7kΩ 1/10W J
R9527	NRSA02J-473X	MG R	47kΩ 1/10W J
R9528	NRS12BJ-104X	CHIP RESISTOR	100kΩ 1/2W J

R9529	NRS12BJ-104X	CHIP RESISTOR	
R9530	QR20121-2R7	UNF. RESISTOR	
R9531	NRSA02J-103X	MG R	10kΩ 1/10W J
R9532	NRSA02J-474X	MG R	470kΩ 1/10W J
R9533	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R9534	NRSA02J-152X	MG R	1.5kΩ 1/10W J
R9535	NRSA02J-393X	MG R	39kΩ 1/10W J
R9536	NRSA02J-103X	MG R	10kΩ 1/10W J

R9537	NRSA02J-222X	MG R	2.2kΩ 1/10W J
R9538	QRE141J-0R0Y	C R	0.0Ω 1/4W J
R9539	QRN141J-0R0Y	C R	0.0Ω 1/4W J
R9540	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
R9542	NRSA02J-0R0X	MG R	0.0Ω 1/10W J
R9543	NRSA02J-102X	MG R	1kΩ 1/10W J
R9544	NRS144J-1R0X	CHIP RESISTOR	
R9546	QRE141J-473Y	C R	47kΩ 1/4W J

R9547	QRE141J-103Y	C R	10kΩ 1/4W J
R9602-03	QRZ020S-R01	M P RESISTOR	0.01 Ω
R9862	QRE121J-474Y	C R	470kΩ 1/2W J

CAPACITOR

△ C9102	QCZ9078-222	C CAP.	2200pFAC250V M
△ C9103	QCZ9078-222	C CAP.	2200pFAC250V M
△ C9104	QCZ9078-472	C CAP.	4700pFAC250V M
△ C9105	QFZ9040-474	M F CAPACITOR	0.47μF
△ C9106	QCZ9078-222	C CAP.	2200pFAC250V M
△ C9107	QCZ9078-222	C CAP.	2200pFAC250V M
C9201	NDC21HJ-471X	C CAP.	470pF 50V J
C9202	NDC21HJ-680X	C CAP.	68pF 50V J

C9203	NCB21EK-154X	C CAP.	0.15μF 25V K
C9204	QEHR1VM-477Z	E CAP.	470μF 35V M
C9205	NCF21HZ-334X	CHIP C CAPACITOR	0.33μF 50V Z
C9206	NCB21HK-331X	C CAP.	330pF 50V K
C9207-08	QEHR1HM-226Z	E CAP.	22μF 50V M
C9209	QEHR1HM-107Z	E CAP.	100μF 50V M
C9210	QEHR1HM-226Z	E CAP.	22μF 50V M
C9211	QFZ0128-474	M F CAPACITOR	0.47μF 400V ±3%

△ C9212	QEZ0430-477	E CAP.	
C9213	NCB21EK-104X	C CAP.	0.1μF 25V K
C9214	NDC21HJ-470X	C CAP.	47pF 50V J
C9301	NCF11EZ-105X	C CAP.	1μF 25V Z
C9302	NCF11EZ-105X	C CAP.	1μF 25V Z
C9303	QEHR1VM-227Z	E CAP.	220μF 35V M
C9304	NCB21EK-104X	C CAP.	0.1μF 25V K

C9305	NCB21HK-392X	C CAP.	3900pF 50V K
C9306	NCB21HK-103X	C CAP.	0.01μF 50V K
C9307	NDC21HJ-101X	C CAP.	100pF 50V J
C9308	NDC21HJ-471X	C CAP.	470pF 50V J
C9309	QEHR1HM-106Z	E CAP.	10μF 50V M
C9401-02	NCF11EZ-105X	C CAP.	1μF 25V Z
C9403	QEHR1HM-106Z	E CAP.	10μF 50V M
△ C9404	QCZ9079-222	C CAP.	

C9501	QEHR1CM-227Z	E CAP.	220μF 16V M
C9502	QEHR1HM-106Z	E CAP.	10μF 50V M
C9503	QEHR1HM-105Z	E CAP.	1μF 50V M
C9504	NCB21HK-102X	C CAP.	1000pF 50V K
C9505	QTN1CM-105Z	E CAP.	
C9506	QEHR1CM-107Z	E CAP.	100μF 16V M
C9507-08	NCB21EK-104X	C CAP.	0.1μF 25V K
C9509	QEHR1CM-227Z	E CAP.	220μF 16V M

C9510	NCB21HK-102X	C CAP.	1000pF 50V K
C9511	QCB32HK-561Z	C CAP.	560pF 500V K
C9512	QEHR1HM-226Z	E CAP.	22μF 50V M
C9513	QCB32HK-102Z	C CAP.	1000pF 500V K
C9514	NCB21HK-103X	C CAP.	0.01μF 50V K
C9515	NCB21HK-102X	C CAP.	1000pF 50V K
C9516	QFKB2EJ-334	MM CAP.	0.33μF 250V J
C9517	QCB32HK-102Z	C CAP.	1000pF 500V K

C9602	CEX41423-001	E CAP.	
C9603	QCB32HK-102Z	C CAP.	1000pF 500V K

△ Symbol No. Part No. Part Name Description Local

TRANSFORMER

△ T9201	QQR0817-001	CHOKE COIL	
△ T9301	QQR0812-001	DRIVE TRANSF.	
△ T9401	CETS10S-001	SW TRANSF.	

COIL

△ L9601	QQR0850-001	CHOKE COIL	
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DIODE

△ D9101	D15XB60	BRIDGE DIODE	
D9201	MA3270/H/-X	CHIP ZENER DIODE	
D9202-03	D1F54-X	CHIP DIODE	
D9204	RD18E/B3/-T2	ZENER DIODE	
D9205	EU2A-T3	SI DIODE	
D9206-08	D1F54-X	CHIP DIODE	
D9209	YG912S6	SI DIODE	
D9210	MA30S1-X	ZENER DIODE	

D9211	MA3110/M/-X	ZENER DIODE	
D9212	MA3056/H/-X	ZENER DIODE	
D9301	D1F54-X	CHIP DIODE	
D9302	MA3120/M/-X	ZENER DIODE	
D9303-06	MA111-X	SI DIODE	
D9307	MA3150/M/-X	ZENER DIODE	
D9308	MTZJ27B-T2	ZENER DIODE	
D9309	MA111-X	SI DIODE	

D9401	D1F54-X	CHIP DIODE	
D9402	MA3270/H/-X	CHIP ZENER DIODE	
D9403	D5L60	SI DIODE	
D9404	D1F54-X	CHIP DIODE	
D9405	MA3270/H/-X	CHIP ZENER DIODE	
D9406	D5L60-F1	SI DIODE	
D9407	D1F56-X	CHIP DIODE	
D9501	D1FL20U-X	SI DIODE	

D9502	MA111-X	SI DIODE	
D9503	SF0R1A42	THYRISTOR	
D9504	MA30S1/M/-X	ZENER DIODE	
D9505	D1F56-X	CHIP DIODE	
D9506	D5L60	SI DIODE	
D9507	MTZJ12C-T2	ZENER DIODE	
D9508	MA111-X	SI DIODE	
D9509	MA3180/M/-X	CHIP ZENER DIODE	

D9510	MA3150/M/-X	ZENER DIODE	
D9511	MA111-X	SI DIODE	
D9512	MA3082/M/-X	ZENER DIODE	
D9513	MTZJ12C-T2	ZENER DIODE	
D9514	MA3062/M/-X	ZENER DIODE	
D9515	MA3056/H/-X	ZENER DIODE	
D9516-17	MA111-X	SI DIODE	
D9518-19	1S582-T2	SI DIODE	

D9601	FML-33S	SI DIODE	
D9602-03	D20LC20U	SI DIODE	

TRANSISTOR

Q9201	2SC4668-W	POW TRANSISTOR	
Q9203	2SA1795-W	POW TRANSISTOR	
Q9204	2SK2196	FET	
Q9205	2SA1795-W	POW TRANSISTOR	
Q9206	2SK2196	FET	
Q9207	2SA1795-W	POW TRANSISTOR	
Q9208	2SK2196	FET	
Q9209	2SC4668-W	POW TRANSISTOR	

Q9210	2SA1795-W	POW TRANSISTOR	
Q9301	DTC143XKA-X	CHIP TRANSISTOR	
Q9302-03	DTC114EKA-X	CHIP TRANSISTOR	
Q9304	2SA1162/YG/-X	SI TRANSISTOR	
Q9305	2SC4668-W	POW TRANSISTOR	
Q9306	2SA1795-W	POW TRANSISTOR	
Q9309	2SC3751/KLM/-	SI TRANSISTOR	
Q9310	DTC124EKA-X	DIGI. TRANSISTOR	

△ Q9401	2SK1017MR-01	FET	
△ Q9402	2SK1017MR-01	FET	
Q9501	DTC123YKA-X	CHIP TRANSISTOR	
Q9502	DTC124EKA-X	DIGI. TRANSISTOR	
Q9503-04	2SA1037AK/QR/-X	SI TRANSISTOR	
Q9505	2SC2412K/QR/-X	SI TRANSISTOR	
Q9506	DTC124EKA-X	DIGI. TRANSISTOR	
Q9507	DTC143XKA-X	CHIP TRANSISTOR	

Q9508	2SC4061K/NP/-X	CHIP TRANSISTOR	
Q9509	2SC2412K/QR/-X	SI TRANSISTOR	
Q9510	IRF9630	F. E. T.	
Q9511	DTC143XKA-X	CHIP TRANSISTOR	
Q9512	2SC2412K/QR/-X	SI TRANSISTOR	

Symbol No.	Part No.	Part Name	Description	Local
<b>IC</b>				
IC9201	FA5331M	I C		
IC9301	UC3843BD1-X	I C		
IC9302	TLP721F (GR)	I C. (PH. COUPLER)		
IC9303	TLP721F (GR)	I C. (PH. COUPLER)		
IC9304	TL072CD-X	I C		
IC9501	UPC358G-W	I C. (MONO-ANA)		
IC9502	NJM431U-X	I C		
IC9503	UPC358G-W	I C. (MONO-ANA)		
IC9504	NJM431U-X	I C		
<b>OTHERS</b>				
	CE41666-002A	RADIATION SEET		

**IGNITER P.W.BOARD ASS'Y(SXA-9301B)**

Symbol No.	Part No.	Part Name	Description	Local
<b>RESISTOR</b>				
R9101	QRE122J-102	C R	1kΩ 1/2W J	
R9102-03	QRE122J-153	C R	15kΩ 1/2W J	
R9604	ERUSTAK-5R1	FUSI RESISTOR		
<b>CAPACITOR</b>				
C9101	QFKB2EJ-334	MM CAP.	0.33μF 250V J	
C9102	QCZ0335-681	C CAP.	680pF	
C9103-07	QCZ0335-202	C CAP.	2000pF	
C9110-11	QCB32HK-222	C CAP.	2200pF 500V K	
C9603	QE20435-477	E CAPACITOR		
C9604	QEZ0119-105	M.PP CAPACITOR	1μF 200V ±3%	
<b>TRANSFORMER</b>				
T9101	QQR0819-001	PULSE TRANS		
T9102	QQR0852-001	PULSE TRANS		
<b>DIODE</b>				
D9101	KIV12-F1P15	THYRISTOR		
D9102-03	HVR-1X-40B	SI DIODE		
D9605-06	FML-335	SI DIODE		
<b>OTHERS</b>				
CN90M1	QNZ0127-001	TERMINAL		
RY9601	QSK0080-001	RELAY		
SG9101-02	5563X-1	SPARK GAP		

**FAN POWER P.W.BOARD ASS'Y(SXA-9201B)**

Symbol No.	Part No.	Part Name	Description	Local
<b>RESISTOR</b>				
R9871	NRSA02J-103X	MG R	10kΩ 1/10W J	
R9872	NRSA02J-103X	MG R	10kΩ 1/10W J	
R9873-75	NRSA02J-103X	MG R	10kΩ 1/10W J	
R9881	NRSA02J-223X	MG R	22kΩ 1/10W J	
R9882	NRSA02J-104X	MG R	100kΩ 1/10W J	
R9883	NRSA02J-683X	MG R	68kΩ 1/10W J	
R9884	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	
R9885	NRSA02J-103X	MG R	10kΩ 1/10W J	
R9886	NRSA02J-332X	MG R	3.3kΩ 1/10W J	
R9887	NRSA02J-391X	MG R	390Ω 1/10W J	
R9888	NRSA02J-470X	MG R	47Ω 1/10W J	
R9889	NRSA02J-182X	MG R	1.8kΩ 1/10W J	
R9890	NRSA02J-221X	MG R	220Ω 1/10W J	
R9891	NRSA02J-223X	MG R	22kΩ 1/10W J	
R9892	NRSA02J-333X	MG R	33kΩ 1/10W J	
R9893	NRSA02J-332X	MG R	3.3kΩ 1/10W J	
R9894	NRSA02J-391X	MG R	390Ω 1/10W J	
R9895	NRSA02J-470X	MG R	47Ω 1/10W J	
R9896	NRSA02J-182X	MG R	1.8kΩ 1/10W J	
R9897	NRSA02J-221X	MG R	220Ω 1/10W J	
R9898	NRSA02J-223X	MG R	22kΩ 1/10W J	
R9899	NRSA02J-333X	MG R	33kΩ 1/10W J	
R9900	NRSA02J-332X	MG R	3.3kΩ 1/10W J	
R9901	NRSA02J-391X	MG R	390Ω 1/10W J	

Symbol No.	Part No.	Part Name	Description	Local
<b>RESISTOR</b>				
R9902	NRSA02J-470X	MG R	47Ω 1/10W J	
R9903	NRSA02J-182X	MG R	1.8kΩ 1/10W J	
R9904	NRSA02J-221X	MG R	220Ω 1/10W J	
R9905	NRSA02J-223X	MG R	22kΩ 1/10W J	
R9906	NRSA02J-333X	MG R	33kΩ 1/10W J	
R9907	NRSA02J-103X	MG R	10kΩ 1/10W J	
R9914	NRSA02J-101X	MG R	100Ω 1/10W J	
R9915	NRSA02J-0R0X	MG R	0.0Ω 1/10W J	

<b>CAPACITOR</b>				
C9822-23	NCB21HK-104X	CHIP CAP	0.1μF 50V K	
C9862-63	QEH1CM-107Z	E CAP	100μF 16V M	
C9870-71	QEH1CM-107Z	E CAP	100μF 16V M	
C9872	QEH1EM-227Z	E CAP	220μF 25V M	
C9873-76	QETN1HM-106Z	E CAP	10μF 50V M	

<b>DIODE</b>				
D9821-25	MA111-X	SI DIODE		

<b>TRANSISTOR</b>				
Q9801-06	2SC2412K/QR/-X	SI TRANSISTOR		

<b>IC</b>				
IC9805	PQ30RV11	I C		
IC9808-09	PQ30RV11	I C		

**MAIN LINE FILTER P.W.BOARD ASS'Y  
(SXA-9502B)**

Symbol No.	Part No.	Part Name	Description	Local
<b>RESISTOR</b>				
R9902	QRZ0057-825	C R	8.2MΩ 1W J	
R9910	QRZ0121-4R7	UNF. W. RESISTOR		
R9911-12	QRE141J-103Y	C R	10kΩ 1/4W J	
<b>CAPACITOR</b>				
C9904	QCZ9078-222	C CAP.	2200pFAC250V M	
C9905	QCZ9078-222	C CAP.	2200pFAC250V M	
C9906	QCZ9078-472	C CAP.	4700pFAC250V M	
C9907	QFZ9040-474	M.F. CAPACITOR		
C9909	QFZ9040-474	M.F. CAPACITOR		
C9910	QFZ9036-104	M.F. CAPACITOR	0.1μFAC250V M	
C9911-12	QEH1EM-476Z	E CAP.	47μF 25V M	
<b>DIODE</b>				
D9910	1SS133-T2	SI DIODE		
<b>TRANSISTOR</b>				
Q9910	2SC3311A/QR/-T	SI TRANSISTOR		
<b>OTHERS</b>				
LF9902	QQR0810-001	LINE FILTER		
LF9903	QQR0810-001	LINE FILTER		
RY9910	QSK0083-001	RELAY		

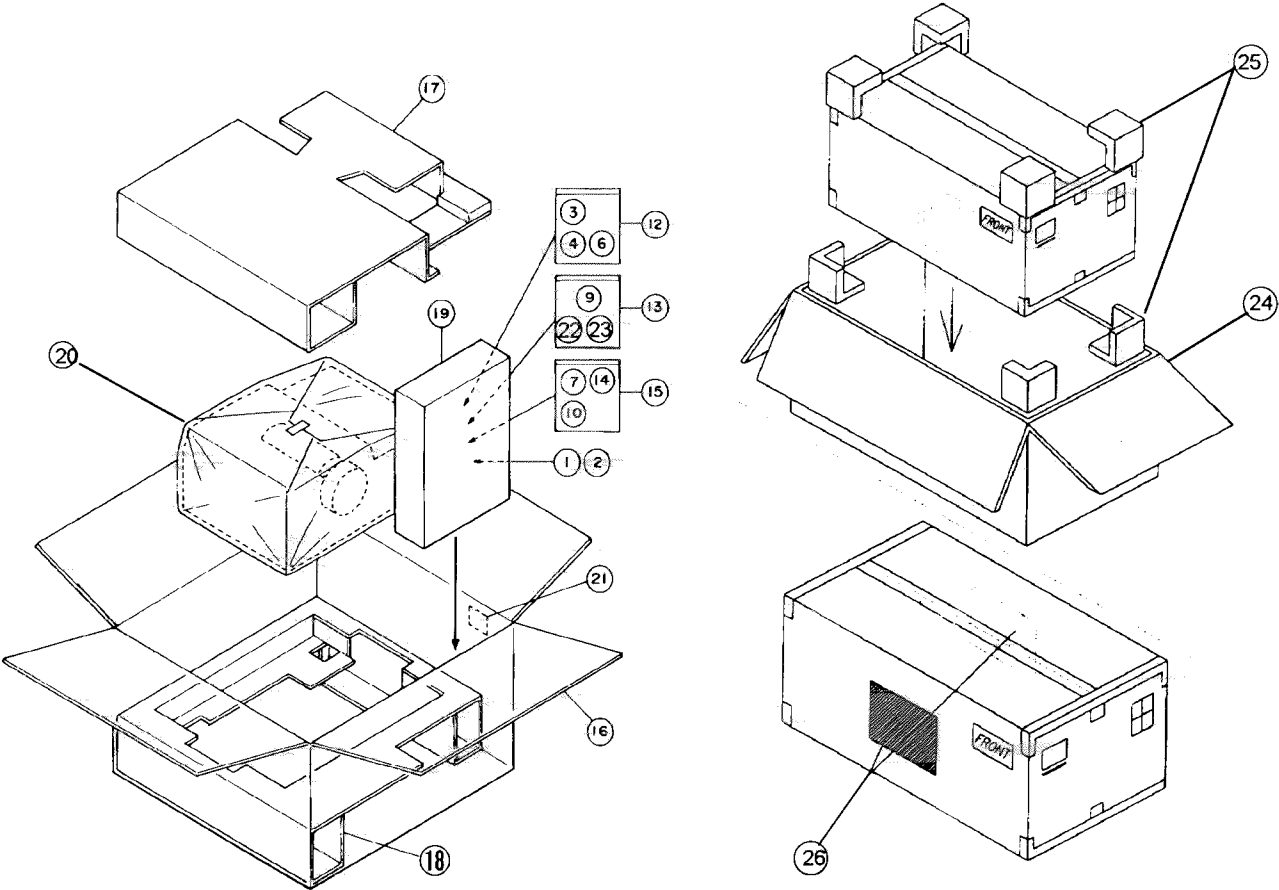
**SUB LINE FILTER P.W.BOARD ASS'Y  
(SXA-9512B)**

Symbol No.	Part No.	Part Name	Description	Local
<b>RESISTOR</b>				
R9901	QRZ0111-274	C R	270kΩ 1/2W K	
<b>CAPACITOR</b>				
C9901	QFZ9040-105	M.F. CAPACITOR	1μF	
C9903	QFZ9036-104	M.F. CAPACITOR	0.1μFAC250V M	
<b>OTHERS</b>				
F9901	QMF51D2-6R3J1	FUSE	6.3 A	
LF9901	QQR0824-001	CORE FILTER		
VA9901	ER2V10V621CS	VARIATOR		

REMOTE CONTROL UNIT PARTS LIST(RM-M10G)

△ Symbol No.	Part No.	Part Name.	Description	Local
	103RRS-018-09R	BATTERY COVER		

PACKING

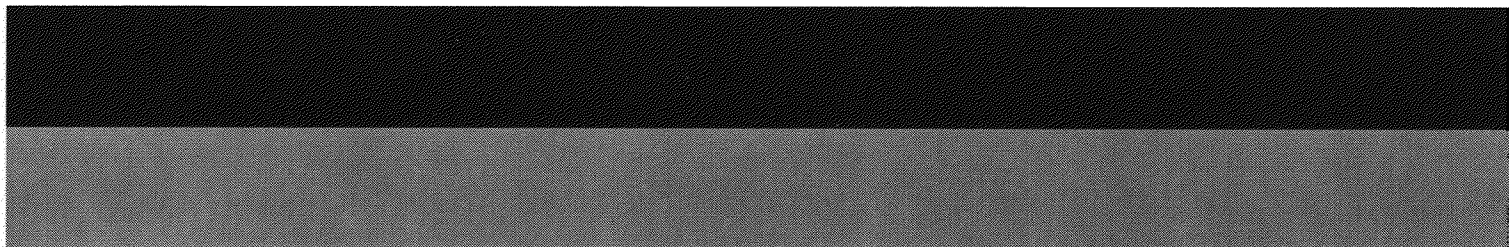


PACKING PARTS LIST

△ Ref.No.	Part No.	Part Name	Description	Local
1	RM-M10G	REMOCON UNIT		
2	QAM0104-001	PC CABLE		
3	QAM0081-001	JLIP CABLE		
4	QAM0072-001	AV CABLE		
6	QAM0102-001	ADAPTOR PLUG		
△ 7	QMPPO50-250-K	POWER CORD	DLA-G10EK	
△ 7	QMPLO50-250-K	POWER CORD	DLA-G10E	
△ 9	LCT0220-001A	INST BOOK		
10	CEAA001-001	ADAPTOR PLUG		
12	QPGA015-03005	POLY BAG		
13	CP30975-001	POLY BAG		
14		BATTERY		
15	QPGA015-03005	POLY BAG		
16	LC20050-004A	PACKING CASE	DLA-G10EK	
16	LC20050-003A	PACKING CASE	DLA-G10E	
17	LC30228-001B	CUSHION (UP)		
18	LC30229-001B	CUSHION (LOWER)		
19	LC30401-001B	ACCESSORY BOX		
20	LC30230-001A	SHEET (COVER)		
21	LC30407-020A	POS PRINT SPEC	DLA-G10EK	
21	LC30407-015A	POS PRINT SPEC	DLA-G10E	
△ 22	LCT0270-001A	INST BOOK		
△ 23	LCT0269-001A	INST BOOK	DLA-G10E ONLY	
24	CMX43592	P.CASE (DOUBLE)		
25	CP30177-001	CORNER PIECE	× 8	
26	CMX43594-4	P.LABEL	× 2	DLA-G10EK
26	CMX43594-3	P.LABEL	× 2	DLA-G10E







# JVC

VICTOR COMPANY OF JAPAN, LIMITED

TELEVISION RECEIVER DIVISION 1106 Heta, Iwai-city, Ibaraki-prefecture, 306-0698, Japan

DLA-G10E  
DLA-G10EK



Printed in Japan  
VP 9806  
K.K/T.K/M.H/A.N

**JVC****SERVICE MANUAL****D-ILA PROJECTOR****BASIC CHASSIS****XA****DLA-G10E**  
**DLA-G10EK****Supplementary**

Since some details of the DLA-G10E / DLA-G10EK SERVICE MANUAL (No.51369, Jun. 1998) were incorrect, we are informing you of these correct descriptions.  
Please use this OPERATING INSTRUCTIONS together with the SERVICE MANUAL previously issued.

**SPECIFICATIONS****■ GENERAL**

Item	INCORRECT	CORRECT
Power requirements	AC 220V – 240V 50/60Hz	AC <b>200V</b> – 240V 50/60Hz
Accessories	Power code (3-pin : 2.5m) × 1	Power code ( <b>2-pin</b> : 2.5m) × 1 <b>[E]</b> Power code (3-pin UK type : 2.5m) × 1 <b>[EK]</b>

**■ ELECTRIC**

Item	INCORRECT	CORRECT
Fuse	$\Delta$ QMF51D2-6R3J1 (6A)	$\Delta$ QMF51D2-6R3J1 ( <b>6.3A</b> )

**■ INPUT CONNECTORS**

Item	INCORRECT	CORRECT
COMPUTER IN-1		
PC	R : 0.7Vp-p 75 $\Omega$ positive G : 0.7Vp-p 75 $\Omega$ positive B : 0.7Vp-p 75 $\Omega$ positive Sync. : 3 – 5Vp-p high impedance	R : 0.7Vp-p 75 $\Omega$ _____ G : 0.7Vp-p 75 $\Omega$ _____ B : 0.7Vp-p 75 $\Omega$ _____ Sync. ( <b>H/Cs · V</b> ) : 3 – 5Vp-p high impedance
COMPUTER IN-2	R : 0.7Vp-p 75 $\Omega$ positive G : 0.7Vp-p (no sync.) 75 $\Omega$ positive B : 0.7Vp-p 75 $\Omega$ positive	R : 0.7Vp-p 75 $\Omega$ _____ G : 0.7Vp-p 75 $\Omega$ _____ B : 0.7Vp-p 75 $\Omega$ _____

**■ OUTPUT CONNECTORS**

Item	INCORRECT	CORRECT
COMPUTER OUT	Sync. : TTL level positive / negative	Sync. ( <b>H/Cs · V</b> ) : TTL level positive / negative

DLA-G10E  
DLA-G10EK

# OPERATING INSTRUCTIONS

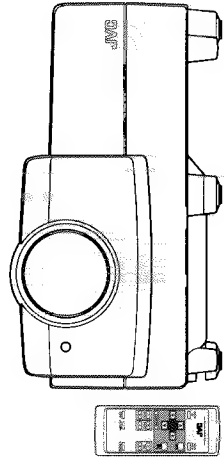
DEUTSCH ENGLISH



DLA-G10E / DLA-G10EK DILA PROJECTOR

**DILA PROJECTOR**  
BEDIENUNGSANLEITUNG : DILA PROJECTOR

## INSTRUCTIONS DLA-G10E DLA-G10EK



Printed in Japan  
LC70220-001A  
0698-K-W-NI



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Thank you for purchasing this projector. Before using it, read and follow all instructions carefully to take full advantage of the projector's capabilities.

# SAFETY PRECAUTIONS

## IMPORTANT INFORMATION

### WARNING :

**TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

### WARNING :

**THIS APPARATUS MUST BE EARTHED.**

### CAUTION :

To reduce the risk of electric shock, do not remove cover.  
Refer servicing to qualified service personnel.

### MACHINE NOISE INFORMATION (Germany only)

Changes Machine Noise Information Ordinance 3. GSGV, January 18, 1991: The sound pressure level at the operator position is equal or less than 70 dB(A) according to ISO 7779.

### About burning-in of the D-ILA device

Do not allow the same still picture to be projected for a long time or an abnormally bright video picture to be projected. Do not project video images with high-intensity or high-contrast on a screen. The video image could be burned in to the D-ILA device.

Use special care when projecting video games or computer program images. There is no problem with ordinary video-cassette playback images.

## IMPORTANT SAFEGUARDS

Electrical energy can perform many useful functions. This unit has been engineered and manufactured to assure your personal safety. But **IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARD**. In order not to defeat the safeguards incorporated into this product, observe the following basic rules for its installation, use and service. Please read these "Important Safeguards" carefully before use.

- All the safety and operating instructions should be read before the product is operated.
- The safety and operating instructions should be retained for future reference.
- All warnings on the product and in the operating instructions should be adhered to.
- All operating instructions should be followed.
- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use attachments not recommended by the product manufacturer as they may be hazardous.
- Do not use this product near water. Do not use immediately after moving from a low temperature to high temperature, as this causes condensation, which may result in fire, electric shock, or other hazards.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. The product should be mounted according to the manufacturer's instructions, and should use a mount recommended by the manufacturer.
- When the product is used on a cart, care should be taken to avoid quick stops, excessive force, and uneven surfaces which may cause the product and cart to overturn, damaging equipment or causing possible injury to the operator.
- Slots and openings in the cabinet are provided for ventilation. These ensure reliable operation of the product and protect it from overheating. These openings must not be blocked or covered. (The openings should never be blocked by placing the product on bed, sofa, rug, or similar surface. It should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to.)



For proper ventilation, separate the product from other equipment, which may prevent ventilation and keep distance more than 50 cm.

POWER CONNECTION  
(United Kingdom only)

WARNING

**Do not cut off the main plug from this equipment.**  
If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or adapter or consult your dealer.

If nonetheless the mains plug is cut off, remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the main supply.

If a new main plug has to be fitted, then follow the instruction given below:

**WARNING:**  
THIS APPARATUS MUST BE EARTHED.

**IMPORTANT:**  
The wires in the mains lead on this product are coloured in accordance with the following cord:

Green-and-yellow : Earth  
Blue : Neutral  
Brown : Live

As these colours may not correspond with the coloured making identifying the terminals in your plug, proceed as follows:

The product should be placed more than one foot away from heat sources such as radiators, heat registers, stoves, and other products (including amplifiers) that produce heat.

When connecting other products such as VCR's, and personal computers, you should turn off the power of this product for protection against electric shock.

Do not place combustibles behind the cooling fan. For example, cloth, paper, matches, aerosol cans or gas lighters that present special hazards when over heated.

Do not look into the projection lens while the illumination lamp is turned on. Exposure of your eyes to the strong light can result in impaired eyesight.

Do not look into the inside of this unit through vents (ventilation holes), etc. Do not look at the illumination lamp directly by opening the cabinet while the illumination lamp is turned on. The illumination lamp also contains ultraviolet rays and the light is so powerful that your eyesight can be impaired.

Xenon gas is enclosed with high pressure inside the light-source lamp (lamp unit) of this projector. If you drop or impart a shock to the lamp, or discard it as is, there is the possibility of explosion, leading to personal injury. Use special care when handling the lamp. For any unclear points, consult your product dealer.

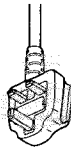
Use only the accessory cord designed for this product to prevent shock.

The power supply voltage rating of this product is AC 200 – 240 V, the power cord attached conforms to the following power supply voltage. Use only the power cord designated by our dealer to ensure Safety and EMC.

When it is used by other power supply voltage, power cable must be changed.

Consult your product dealer.

Power cord (Power supply voltage: AC 200 –240 V)



For DLA-G10EK  
(for United Kingdom)



For DLA-G10E  
(for European continent countries)

**\*DO NOT allow any unqualified person to install the unit.**  
Be sure to ask your dealer to install the unit (eg. attaching it to the ceiling) since special technical knowledge and skills are required for installation. If installation is performed by an unqualified person, it may cause personal injury or electrical shock.

This product should be operated only with the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.

This product is equipped with a three-wire plug. This plug will fit only into a grounded power outlet. If you are unable to insert the plug into the outlet, contact your electrician to install the proper outlet. Do not defeat the safety purpose of the grounded plug.

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at doors, plugs, receptacles, and the point where they exit from the product.

For added protection of this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the product due to lightning and power line surges.

Do not overload wall outlets, extension cords, or convenience receptacles on other equipment as this can result in a risk of fire or electric shock.

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltages and other hazards. Refer all service to qualified service personnel.

Unplug this product from the wall outlet and refer service to qualified service personnel under the following conditions:

- a) When the power supply cord or plug is damaged.
  - b) If liquid has been spilled, or objects have fallen on the product.
  - c) If the product has been exposed to rain or water.
  - d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the Operation Manual, as an improper adjustment of controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
  - e) If the product has been dropped or damaged in any way.
  - f) When the product exhibits a distinct change in performance – this indicates a need for service.
- When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or with same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

The wire which is coloured green-and-yellow must be connected to the terminal which is marked with the letter E or the safety earth or coloured green or green-and-yellow.

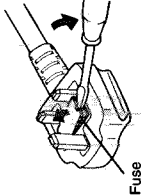
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

When replacing the fuse, be sure to use only a correctly rated approved type, re-fit the fuse cover.

**IF IN DOUBT — CONSULT A COMPETENT ELECTRICIAN.**

**How To Replace The Fuse**  
Open the fuse compartment with the blade screwdriver, and replace the fuse.



Fuse

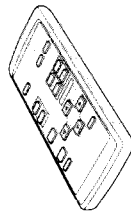
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\* This manual is divided into two language sections:  
English and German.

## Accessories

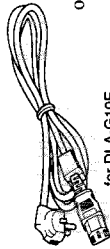
The following accessories are included with this projector. Check for them: if any item is missing, please contact your dealer.



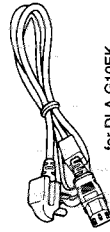
Remote control unit (RM-M10G)



AAA/R03-size dry cell battery (x2)  
(for checking operation)

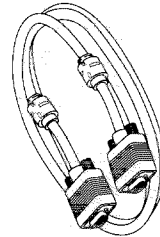


for DLA-G10E  
(for European continent countries)



for DLA-G10EK  
(for United Kingdom)

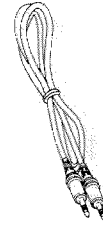
Power cord (approx. 2.5 m)



Personal computer connection cable  
(approx. 2 m)  
(D-sub, 3 row, 15 pin)



AV connection cable  
(approx. 1.5 m)



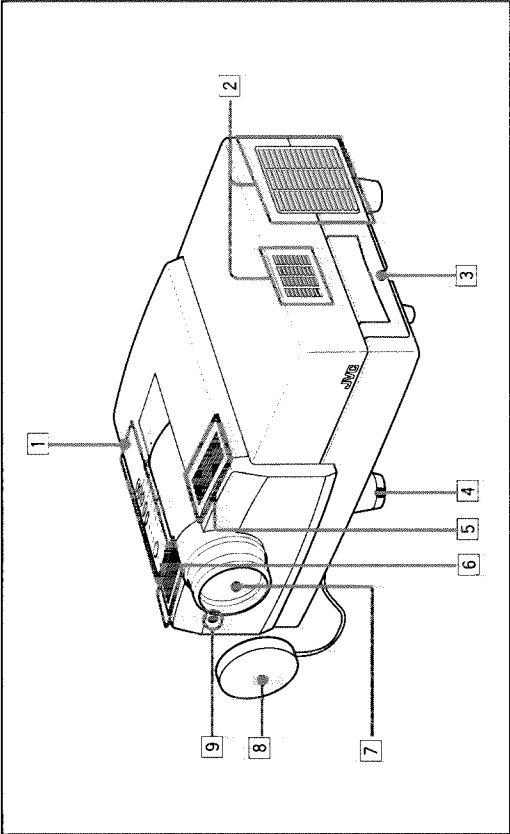
Audio cable  
(approx. 3 m)  
(3.5 mm dia. stereo mini plug)



Conversion adapter for Mac  
(for Macintosh)



BNC-RCA conversion plug

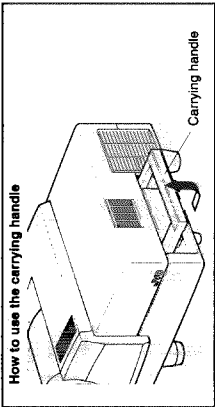


- 1 Control panel**  
For details, refer to "Control Panel" (page 9).
- 2 Exhaust vents**  
Vents for cooling fans through which warm air comes out.

**CAUTION**

- Do not block the exhaust vents, or heat builds up inside, possibly causing a fire. Also, do not touch the vents, or this could cause a low-temperature burn.

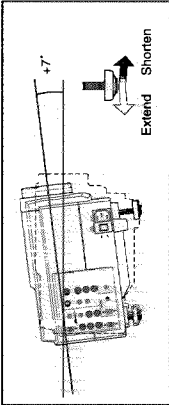
- 3 Carrying handle**  
Raise this handle when carrying the projector.



**CAUTIONS**

- When carrying the projector, do not give a shock to it. Be careful to keep its balance.
- Do not carry it while the light source lamp is on or the cooling fan is operating. This could cause personal injury.

- 4 Adjustable foot (for adjusting upper/lower angles)**  
It is adjusted to be level when shipped from the factory. Turning the foot allows adjustment up to +7°.

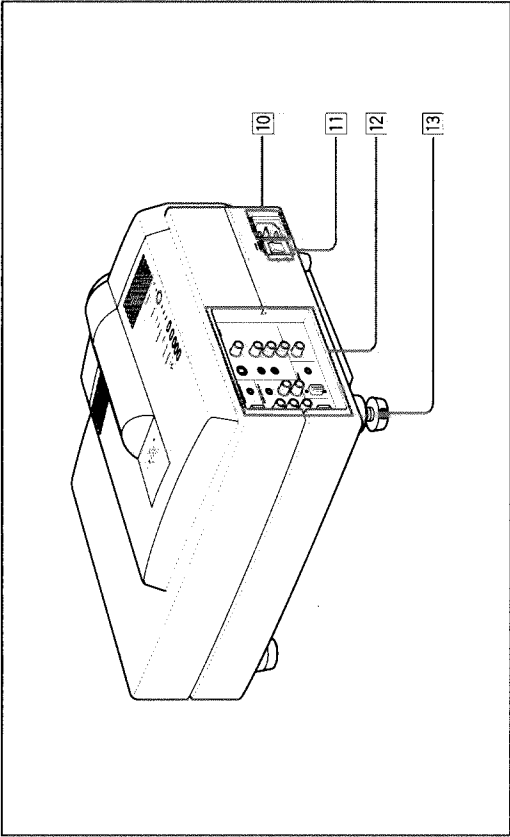


- 5 Built-in speaker (left)**  
**6 Built-in speaker (right)**

- 7 Lens**  
Projection lens, which is an electrically driven, approx. 1.5 x zoom lens. Before projection, remove the lens cap.

- 8 Lens cap**  
The cap has a string attached and the string is fixed to the projector when shipped from the factory. It is recommended that the cap be fitted on to prevent the lens becoming dirty when the projector is not used.

- 9 Remote sensor**  
When operating with the remote control, aim it toward this sensor. You can also operate the remote control by pointing it to a screen and allowing the remote sensor to receive the reflected light.



- 10 AC IN (power input) terminal**  
This is the power input terminal where the supplied power cord is connected. For details, refer to page 24.

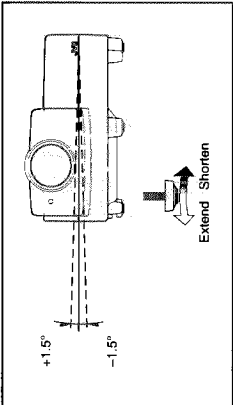
**CAUTION**

- Use the supplied power cord with the ferrite core only.

- 11 MAINS POWER switch**  
This is the main power switch. When it is turned on, the projector goes into stand-by state, and the STAND BY indicator on the control panel comes on.  
**ON [ ]**: The mains power turns on.  
**OFF [O]**: The mains power turns off.

- 12 Connector panel**  
For details, refer to "Connector Panel" on page 11.

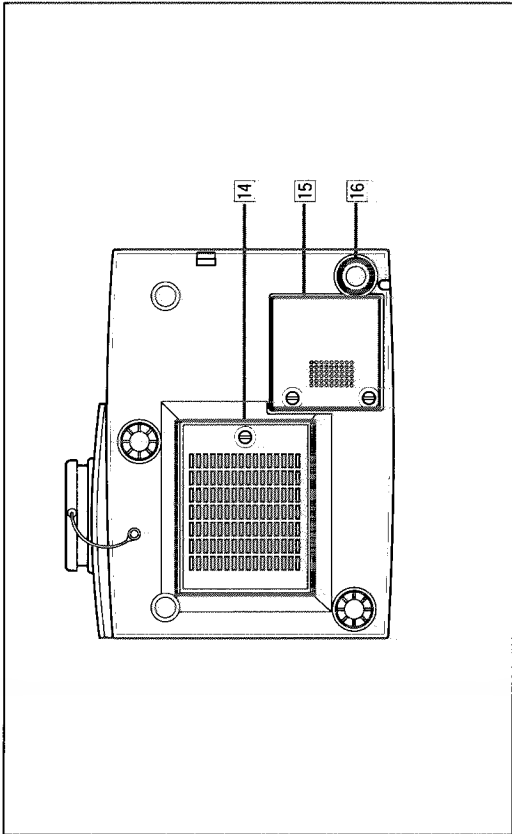
- 13 Adjustable foot (for horizontal angle adjustment)**  
It is set at the shortest position when shipped from the factory. Turn the foot to make the projector level. Adjustment can be made in the range of +1.5° and -1.5° from the horizontal position.





Controls and Features (cont.)

Bottom Surface



14 Air Intake area (filter)

Air is taken in through this area to cool the light-source lamp. If this area is blocked or if something that obstructs taking in or exhausting air is placed around the projector, heat may build up inside and could cause a fire. For details, refer to "Precautions for Installation" on page 15.

CAUTIONS

- Be careful as paper, cloth or soft cushion could be drawn in if placed nearby. Do not block the intake area, or heat may build up and could cause a fire.
  - Clean the filter periodically. For details, refer to "Cleaning and Replacing the Filter" on page 51.
- Deposition of dirt on the filter works to reduce the cooling effect, causing heat to build up inside, which could cause a fire or malfunction.

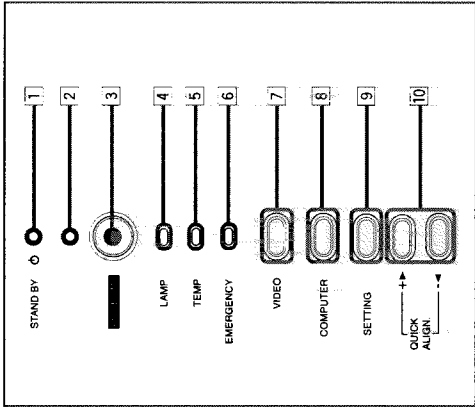
15 Opening for replacing the light-source lamp

For replacing the light-source lamp, refer to "Replacing the Light-Source Lamp" on page 48.

16 Fixing foot

Controls and Features (cont.)

Control Panel



1 STAND BY Indicator

**ON** : When in stand-by mode.  
**Blinking** : When in cool-down mode.

Memo

About the cool-down mode:

This projector has a function to cool down the heated lamp for a fixed period of time after projection is finished. This feature is referred to as the cool-down mode.

CAUTION

- The purpose of the cool-down mode is to prevent inner parts from being deformed or broken by heat from the heated lamp as well as to prolong the life of the lamp. Do not turn off the mains power switch while in the cool-down mode. Also, do not place the projector on its side or stand it upright; this may block the exhaust vents.

2 OPERATE Indicator

**ON**: When the projector is in operation (projecting)

3 OPERATE button

When the projector is in the stand-by mode, press this button, and the mains power switch is turned on, causing the OPERATE indicator to light. Press it again, and the projector goes into the cool-down mode, then stand-by mode.

Memo

While in the cool-down mode:

If you press the OPERATE button, the projector is not turned on.

4 Lamp Indicator

**ON** : After the light-source lamp has been used for more than approx. 900 hours.

**Blinking** : Replace the lamp. Refer to "Replacing the Light-Source Lamp" on page 48.

5 TEMP Indicator

**ON**: The temperature inside the projector has abnormally risen.

Note

- While the TEMP indicator is on (during abnormal temperature), the power is automatically cut off, and an emergency mode is shown (with the EMERGENCY indicator blinking).

6 EMERGENCY Indicator

**Blinking**: Something abnormal has occurred with the projector.

Memo

About the emergency mode:

The emergency mode is shown when the following anomalies have occurred with the projector (the EMERGENCY indicator blinks). In the emergency mode, projection is automatically interrupted and the cooling fans operate for about 20 seconds.

- When the air filter is displaced.
- When the light-source lamp has suddenly gone off.
- When the fans have stopped.
- When the temperature inside has risen abnormally high.

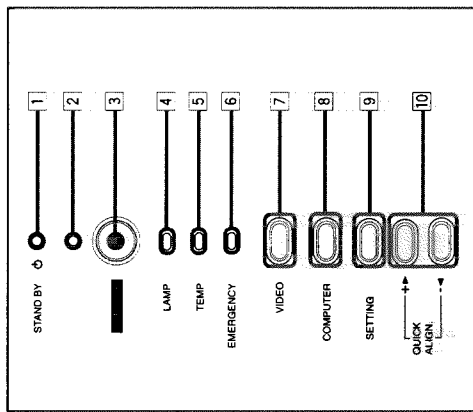
CAUTION

When an emergency mode is shown:

After the cooling fans have stopped, turn off the main power switch and unplug the power cord from the wall outlet. Make sure the lamp-replacement cover and the air filter are correctly installed. Then, plug in the power cord again and operate the projector.  
If it goes into an emergency mode again, after the cooling fans have stopped, turn off the mains power switch, unplug the power cord, and call your dealer for repair.

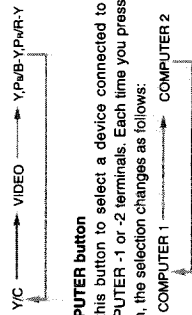
Controls and Features (cont.)

Control Panel (Cont.)



7 VIDEO button

Use this button to select a device such as a video deck connected to the AV IN terminal of the projector. Each time you press the button, the device selected changes as follows:



8 COMPUTER button

Use this button to select a device connected to the COMPUTER -1 or -2 terminals. Each time you press the button, the selection changes as follows:



9 SETTING button

Use this button to call up the setting menu. For details, refer to "Making Basic Settings" on page 31.

10 QUICK ALIGN button

While a menu screen is shown, use this button to adjust the values for the item selected. When no menu is shown, the quick alignment function works.

• When a menu is shown

• +> button: The value for the selected item increases.  
• -< button: The value for the selected item decreases.

• When no menu is shown

Press the +> button and -< button at the same time: QUICK ALIGNMENT is displayed on the screen and the quick alignment function works (TRACKING, PHASE, H. POS. and V. POS. are automatically adjusted). When the adjustment is finished, the display goes off automatically.

Memo

The quick alignment function :

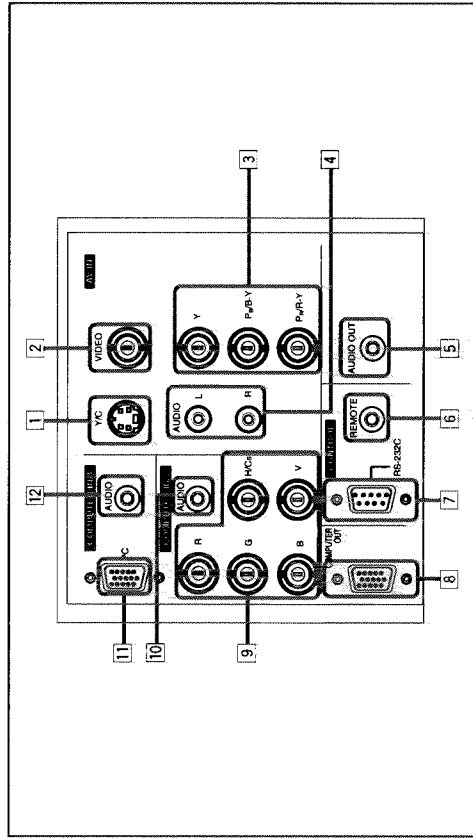
- Works for computer input (COMPUTER- 1 and - 2 input terminals) signals.
- Does not work for video input (AV IN input terminal) signals.

CAUTION

- Automatic adjustment with the quick alignment function should be done on a bright still-picture screen. This function may not work correctly on a dark screen or motion-picture screen. If adjustment with this function is not satisfactory, adjust TRACKING, PHASE, H. POS. and V. POS. manually (see pages 31, 37 and 38).

Controls and Features (cont.)

Connector Panel



1 Y/C (S Video) Input terminal (Mini DIN 4 pin)

Connect this terminal to the S video output terminal of a video deck, etc.

2 VIDEO (composite video) Input terminal (BNC)

Connect this terminal to the composite video output terminal of a video deck, etc.

3 Y, P/B-Y, P/R-Y input terminals (BNC)

These are input terminals for component (Y, B-Y, R-Y) signals and Hi-Vision base band (Y, P<sub>B</sub>, P<sub>R</sub>) signals. Devices with component signal output terminals for NTSC or Hi-Vision can be connected.

4 AUDIO L/R (Audio • left/right) Input terminals (pin jacks)

Of devices connected to the video input terminals, such as a video deck, etc., the audio output terminals of the device to be projected is connected to these terminals. The input audio signal is reproduced by the speakers of the projector. The signal is also output from the AUDIO OUT terminal of the projector.

- When the input signal is stereo signal, connection should be made to both L and R.
- Signals from a monaural device should be connected to only L. That way, the projector's speakers and the AUDIO OUT terminal produce the same sound from both L and R.

Memo

To select the proper audio input for video input:

The video input terminals (AV IN input terminals) can be switched with the projector's or remote control's VIDEO button. However, since this projector has only single audio input terminal, reconnect audio input in accordance with the AV device to be used.

6 REMOTE terminal (mini jack)

Connect an infrared remote control extension unit, etc. to this jack.  
• For details, consult your dealer.

7 RS-232C terminal (D-sub 9 pin)

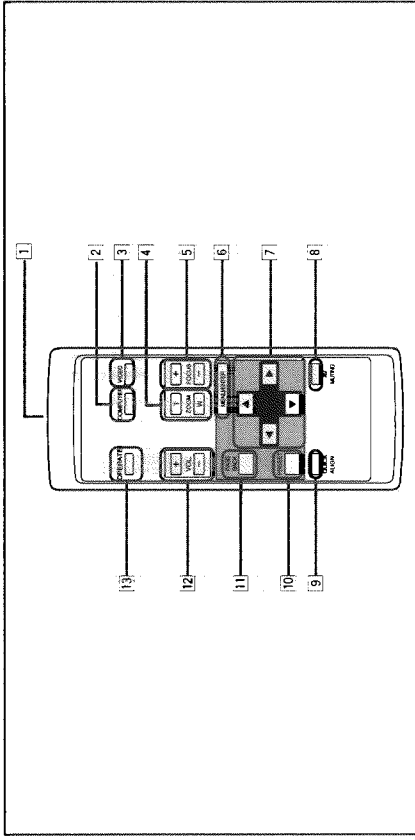
This is a RS-232C interface-specified terminal. This projector can be controlled by a computer connected externally.  
• For details, consult your dealer.

8 COMPUTER OUT (computer output) terminal (D-sub 3-row 15 pin)

The computer input signal projected on the screen is output. A display unit can be used by connecting it to this terminal.

## Controls and Features (Cont.)

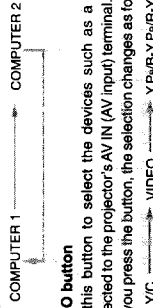
### Remote Control Unit



#### 1 Remote control's signal transmitter

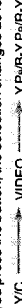
##### 2 COMPUTER button

Use this button to select the devices connected to the projector's COMPUTER IN (computer input) -1 and -2 input terminals. Each time you press the button, the selection changes as follows:



##### 3 VIDEO button

Use this button to select the devices such as a video connected to the projector's AV IN (AV input) terminal. Each time you press the button, the selection changes as follows:



##### 4 ZOOM (T.W) button

Use these buttons to increase or decrease the screen size. (The projector's projection lens is an electrically driven zoom lens of about 1.5 x.)

T : The screen size decreases.

W : The screen size increases.

##### 5 FOCUS (+/-) button

Use these buttons to adjust the focus of the projected video.

+: The focus point becomes more distant.

- : The focus point becomes nearer.

##### 6 MENU/ENTER button

Use this button to display the main menu. While the main menu is displayed, pressing this button displays a details setting (submenu) for items with details settings.

##### 7 Cursor (Δ/▽/◀/▶) button

While the main menu is displayed, use these buttons to select an item to adjust or make adjustment.

##### 8 AV MUTING (On/Off) button

Use this button to turn off the video image and audio sound temporarily. Pressing it again makes the video image and audio sound to resume.

##### 9 QUICK ALIGN. (Quick Alignment) button

Use this button to automatically adjust TRACKING, PHASE, H, POS. and V. POS. of the projected video. During the automatic adjustment, QUICK ALIGNMENT appears on the screen, and disappears after it is finished.

#### Memo

##### Quick alignment function:

Does not work for video input (AV IN input terminal) signals. Works only for computer-related (COMPUTER-1 and -2 input terminals) signals.

#### CAUTION

• Automatic adjustment with the quick alignment function should be done on a bright still-picture screen. This function may not work correctly on a dark screen or motion-picture screen. If adjustment with this function is not satisfactory, adjust TRACKING, PHASE, H, POS. and V. POS. manually (see pages 31, 37 and 38).

##### 10 PRESET button

While making adjustment on the main or setting menu, use this button to reset the setting of the selected item to the factory-set value. This button works only for numerical settings and does not work for switching ON to OFF.

##### 11 PAGE BACK button

While a details setting is displayed, use this button to go back to the previous page.

##### 12 VOL. (Volume) (+/-) button

Use these buttons to adjust the sound volume:

+: Increase the volume level.

- : Decrease the volume level.

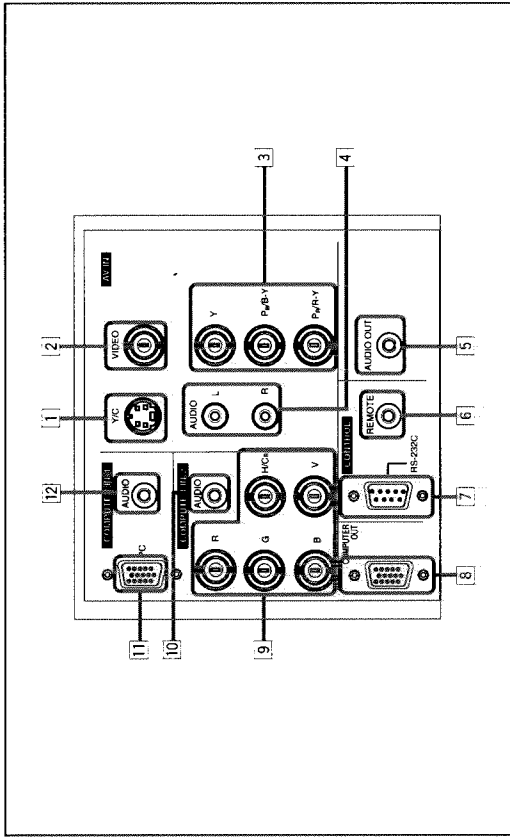
##### 13 OPERATE button

To turn on the power, press this button for one second or more.

• About 30 seconds after the power has turned on, video image will appear on the screen.

## Controls and Features (cont.)

### Connector Panel (Cont.)



#### 9 COMPUTER IN (computer input) -2 terminal (BNC)

These are input terminals for analog RGB signals, vertical sync (V) signals, and horizontal sync (H) signals / composite signals (Cs). Devices which have analog RGB signal output terminals can be connected.

##### \* Input of external sync signals is automatically detected.

Detection of H/D signals or Cs signals causes automatic switch to external sync. The priority order is H/D > Cs.

#### CAUTION

• When computer-related signals are input, the uppermost edge of the screen may appear bowing if the sync signal input is composite sync (Cs) or G on sync signal. In that case, use separate sync signals for vertical sync (V) and horizontal sync (H).

#### 10 AUDIO input terminal (stereo mini jack)

This is an audio input terminal for COMPUTER IN (computer input) -2 terminal. Connect the audio output signal of a device connected to COMPUTER IN (computer input) -2 terminal.

• When input to COMPUTER -2 is selected, the audio signal input is reproduced by the projector's speakers. Also, signals can be output from the AUDIO OUT (audio output) terminal.

(However, if a cable is connected to AUDIO OUT (audio output) terminal, audio sound does not come out from the projector's speakers.)

#### 11 COMPUTER IN (computer input) -1 terminal (D-sub 3-row 15 pin)

This is an input terminal (PC) dedicated for computer signals (RGB video signals and sync signals).

Connect the display output terminal of the computer to this terminal. When a Macintosh computer is to be connected, use the Conversion adapter for Mac supplied.

#### CAUTION

• When computer-related signals are input, the uppermost edge of the screen may appear bowing if the sync signal input is composite sync (Cs) or G on sync signal. In that case, use separate sync signals for vertical sync (V) and horizontal sync (H).

#### 12 AUDIO (audio) input terminal (stereo mini jack)

This is an audio input terminal for COMPUTER IN (computer input) -1 terminal. Connect the audio output signal of a device connected to COMPUTER IN (computer input) -1 terminal.

• When input to COMPUTER -1 is selected, the audio signal input is reproduced by the projector's speakers. Also, signals can be output from the AUDIO OUT (audio output) terminal.

(However, if a cable is connected to AUDIO OUT (audio output) terminal, audio sound does not come out from the projector's speakers.)

# Installing the Projector

## Precautions for Installation

### CAUTION

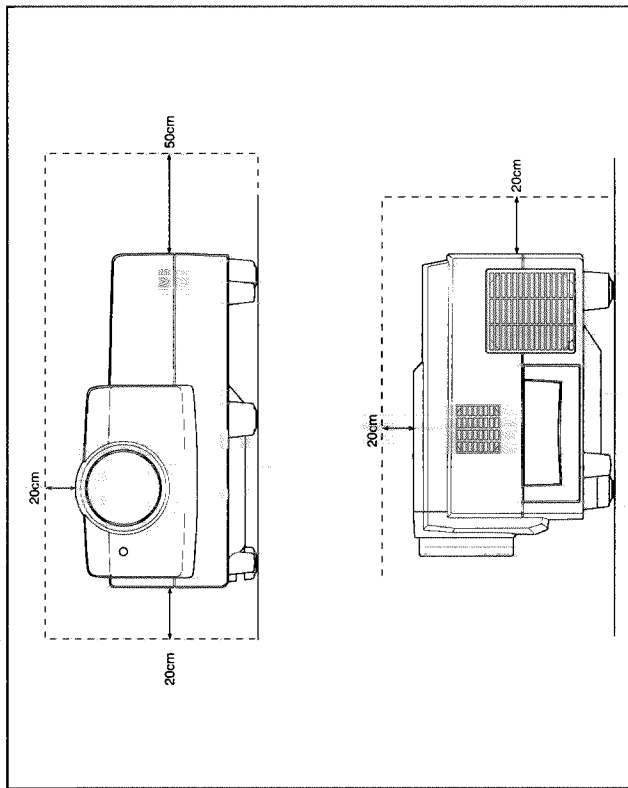
**Do not install the projector in the following places :**

- There is much water, humidity or dust.
- The projector may be subjected to oil smoke or cigarette smoke.
- On a soft surface such as a carpet or cushion.
- The projector may be subjected to direct sunlight.
- Temperature is high or humidity is low.
- Allowable operation temperature range: + 5°C to + 35°C
- Allowable relative humidity range: 20% to 80% (no condensation)
- Allowable storage temperature range: -10°C to +60°C

**When installing the projector, observe the followings:**

- **Do not use the projector placed on its side.**  
Avoid using the projector placed on its side. This could cause a malfunction.
- **Use the projector within the installed angle.**  
Avoid using the projector inclined  $\pm 30^\circ$  or more right-to-left or left-to-right. This could cause color variation or harm the lamp life.
- **Do not block the exhaust vents.**  
Do not use a cover which encloses the projector air-right or blocks the exhaust vents. Allow sufficient space around the projector. When the projector is enclosed in a space of the following dimensions, use an air conditioner so the temperature inside becomes equal to the outside temperature.

### Allowable minimum space required



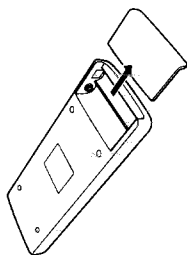
## Controls and Features (cont.)

### Installing Batteries

Install batteries in the remote control. If the remote control has started to work erratically, replace the batteries.

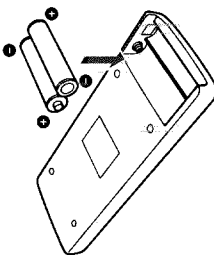
#### 1 Open the back cover.

While pushing on the back cover, slide it in the direction of the arrow.



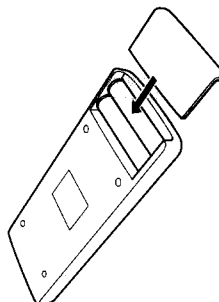
#### 2 Install the batteries.

Place the two batteries (AAA/R03-size) supplied in the remote control as illustrated below.



#### 3 Close the back cover.

Slide the back cover in the direction of the arrow until a click is heard.



**Precautions for using batteries**  
If batteries are used incorrectly, they may crack or leak liquid. This could cause a fire, burn, malfunction, or staining or damaging the surrounding.

**Beware of the following:**

- Do not mix new and old batteries.
- Do not mix different types of batteries as they differ in characteristics.
- Place batteries so they match the polarities indicated: (+) to (+) and (-) to (-).
- Be sure to put the minus (-) end in first to avoid short-circuiting.
- Use only designated batteries.
- Remove the batteries if not used for a prolonged period of time.
- When the batteries are exhausted, replace them immediately. Otherwise, liquid could leak, or malfunction could occur due to leaked liquids. If the leaked liquid contacts the skin, wipe it off with a cloth, otherwise the skin could become rough.
- Do not put batteries into fire or try to recharge them.
- Batteries run for six months to one year in normal use. But the batteries supplied are for confirming operation and may not run that long. When the remote control starts failing to work properly, replace the batteries with new ones.

The instruction below applies only to the use in Holland.

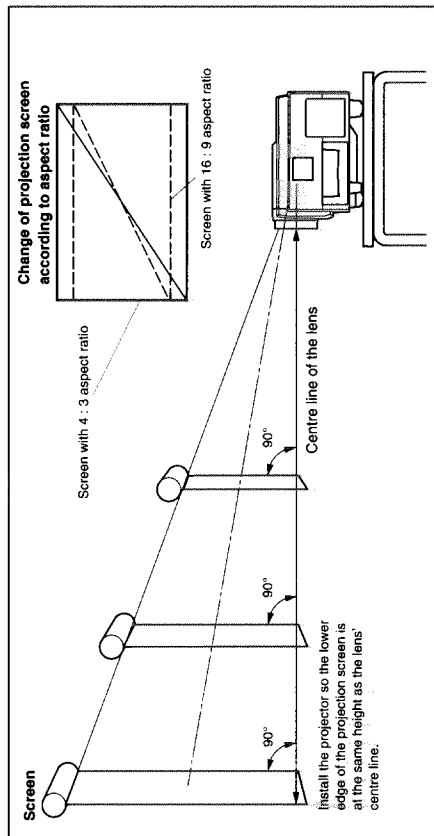
#### Gebruik batterijen:



## Installing the Projector (Cont.)

### Projection Distance and Screen Size

The projector's projection lens is a zoom lens of about 1.5 x. The screen size at the maximum enlargement is 1.5 times that of the minimum size.  
The projection distance that can be focused is 2.5 to 20 m. Install the projector within this range.



Projection distance	Projection screen size (diagonal length)			
	When screen aspect ratio is 4 : 3		When screen aspect ratio is 16 : 9	
	Minimum projection screen	Maximum projection screen	Minimum projection screen	Maximum projection screen
2.5 m	approx. 107 cm	approx. 160 cm	approx. 100 cm	approx. 144 cm
5 m	approx. 219 cm	approx. 325 cm	approx. 201 cm	approx. 297 cm
10 m	approx. 437 cm	approx. 657 cm	approx. 402 cm	approx. 601 cm
20 m	approx. 877 cm	approx. 1,323 cm	approx. 806 cm	approx. 1,214 cm

\*Also, refer to the table of "Relationship Between Projection Distances and Projection Screen Sizes" on page 17 as a reference.

#### CAUTIONS AND NOTES

- Install the screen so the lower edge of the projected picture aligns with the extended centre line of the projector's lens. That way, the lower edge of the picture projected on a 4 : 3 aspect ratio screen aligns with the extended centre line of the lens. Also, the screen must be at right angles with the extended centre line of the lens (so that projection occurs at right angles with the screen).
- When installing the screen, use a 4 : 3 aspect ratio picture.
- (A 16 : 9 aspect ratio picture is projected based on the width of the range in which a 4 : 3 aspect ratio picture is projected.)
- The diagonal length of a 16 : 9 aspect ratio picture is about 91.8% that of a 4 : 3 aspect ratio picture. This value is a guide and should be used as a reference.
- When projecting at the maximum projection distance (20 m), we recommend that the projector be used with the zoom on the Tele (T).
- If sunlight or lamp light strikes the projection screen directly, the picture becomes whitish and dim. Be sure to use a curtain, etc. to shield the light.
- Trapezoidal distortion may not be corrected.
- Adjust the projector within the range of angle adjustment (up/down adjustment angle: +7°; horizontal adjustment angle: ±1.5°) so that it is set up level.
- The numeric values listed in the table of Relationship Between Projection Distances and Screen Sizes on page 17 are provided only as a guide or reference. The projection sizes may vary within manufacturing tolerances of the projection lens.
- When hanging the projector from the ceiling, use a dedicated hanging fixture.

## Installing the Projector (Cont.)

### Relationship between Projection Distances and Projection Screen Sizes

For 4 : 3 aspect ratio screens

Projection distance	Projection screen size (diagonal length)	
	Minimum projection screen size (Tele end)	Maximum projection screen size (Wide end)
2.5 m	approx. 107 cm	approx. 160 cm
3.0 m	approx. 130 cm	approx. 193 cm
4.0 m	approx. 173 cm	approx. 259 cm
5.0 m	approx. 219 cm	approx. 325 cm
6.0 m	approx. 262 cm	approx. 391 cm
7.0 m	approx. 305 cm	approx. 457 cm
8.0 m	approx. 351 cm	approx. 525 cm
9.0 m	approx. 394 cm	approx. 591 cm
10.0 m	approx. 437 cm	approx. 657 cm
11.0 m	approx. 483 cm	approx. 723 cm
12.0 m	approx. 526 cm	approx. 787 cm
13.0 m	approx. 569 cm	approx. 858 cm
14.0 m	approx. 615 cm	approx. 924 cm
15.0 m	approx. 661 cm	approx. 990 cm
16.0 m	approx. 702 cm	approx. 1,056 cm
17.0 m	approx. 747 cm	approx. 1,125 cm
18.0 m	approx. 790 cm	approx. 1,191 cm
19.0 m	approx. 834 cm	approx. 1,257 cm
20.0 m	approx. 877 cm	approx. 1,323 cm

For 16 : 9 aspect ratio screens

Projection distance	Projection screen size (diagonal length)	
	Minimum projection screen size (Tele end)	Maximum projection screen size (Wide end)
2.5 m	approx. 100 cm	approx. 144 cm
3.0 m	approx. 120 cm	approx. 175 cm
4.0 m	approx. 161 cm	approx. 236 cm
5.0 m	approx. 201 cm	approx. 297 cm
6.0 m	approx. 242 cm	approx. 355 cm
7.0 m	approx. 280 cm	approx. 419 cm
8.0 m	approx. 321 cm	approx. 480 cm
9.0 m	approx. 361 cm	approx. 541 cm
10.0 m	approx. 402 cm	approx. 601 cm
11.0 m	approx. 442 cm	approx. 660 cm
12.0 m	approx. 483 cm	approx. 726 cm
13.0 m	approx. 524 cm	approx. 787 cm
14.0 m	approx. 564 cm	approx. 848 cm
15.0 m	approx. 605 cm	approx. 909 cm
16.0 m	approx. 646 cm	approx. 970 cm
17.0 m	approx. 686 cm	approx. 1,031 cm
18.0 m	approx. 724 cm	approx. 1,092 cm
19.0 m	approx. 765 cm	approx. 1,153 cm
20.0 m	approx. 806 cm	approx. 1,214 cm

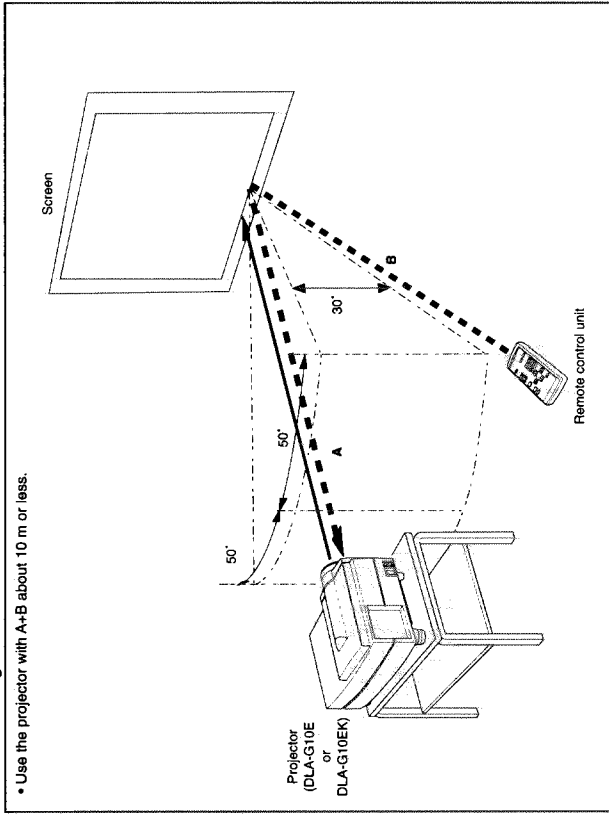
## Installing the Projector (Cont.)

### Effective Range and Distance of the Remote Control Unit

The operable distance of the remote control unit is about 10 m for direct reception. The remote control unit can be used by having it reflected on the screen, etc. When you use the remote control unit by reflecting it at the screen, the total distance of A + B should be about 10 m or less. The operable angles of the remote control unit is 50° right to left, and 15° up and down.

#### The effective range and distance of the remote control unit

- Use the projector with A+B about 10 m or less.



#### Note

- Depending on the type of the screen used, the effective distance of the remote control unit may be reduced.

## Connecting to Various Devices

- Before connection, be sure to turn off the projector and connected devices.
- Read the manual which comes with each device thoroughly.

### Signals that Can Be Input to the Projector

The following signals can be input to the projector.

#### Video signals

##### (1) Response to colour systems

Input terminal	Colour system	NTSC	NTSC4.43	PAL	SECAM
VIDEO		○	○	○	○
Y/C		○	○*	○	○
Y, Pb/B-Y, Pr/R-Y		○*	○*	○*	○*
G, B, R, H/Cs, V		○*	○*	○*	○*

\*1: Responds if Y/C output is available.

\*2: Signifies that component signals ("Y, Pb, Pr"/"Y, B-Y, R-Y"/"G, B, R, H/Cs, V") conform to the signal timing (synchronization and video period) of each colour system. The colour systems are used for convenience only.

##### (2) Response to double density (\*1), high-vision signals

Input terminal	NTSC*	PAL*	High-vision signal
Y, Pb/B-Y, Pr/R-Y	○	○	○
G, B, R, H/Cs, V	○	○	○

\*1: Signals whose density of scanning lines/field is twice as high.

\*2: Responds to signals whose horizontal scanning frequency is 31.5 kHz. NTSC can be made twice as dense by a line doubler (separately available; recommended article). Also, possible to respond to fully-specified, decoded 525P progressive signal.

\*3: Responds to signals whose horizontal scanning frequency is 33.5 kHz. PAL can be made twice as dense by a line doubler (separately available; recommended article).

#### Computer signals

- Signals with the following resolutions can be input to the input terminal of COMPUTER IN-1 (PC) or COMPUTER IN-2 (G, B, R, H/Cs, V). (The following signals are preset.)

Screen resolution (standard name)	Horizontal frequency	Vertical frequency	Scanning method
640 × 400 (PC-9801)	24.8kHz	56.4Hz	Non-Interlace
640 × 350 (VGA1)	31.5kHz	70.1Hz	Non-Interlace
640 × 480 (VGA3)	31.5kHz	59.9Hz	Non-Interlace
640 × 480 (Macintosh 13")	35.0kHz	66.7Hz	Non-Interlace
640 × 480 (VGA VESA)	37.5kHz	75.0Hz	Non-Interlace
800 × 600 (SVGA1)	37.9kHz	60.3Hz	Non-Interlace
800 × 600 (SVGA2)	48.1kHz	72.2Hz	Non-Interlace
832 × 624 (Macintosh16")	49.7kHz	74.6Hz	Non-Interlace
1024 × 768 (XGA1)	48.4kHz	60.0Hz	Non-Interlace
1024 × 768 (XGA2)	56.5kHz	70.1Hz	Non-Interlace
1024 × 768 (Macintosh 19")	60.2kHz	74.9Hz	Non-Interlace
1152 × 870 (Macintosh 21")	68.7kHz	75.0Hz	Non-Interlace
1280 × 1024 (SXGA1)	64.0kHz	60.0Hz	Non-Interlace
1280 × 1024 (SXGA2)	70.8kHz	67.0Hz	Non-Interlace
1360 × 1024 (SXGA3; Mac Board)	80.0kHz	75.1Hz	Non-Interlace

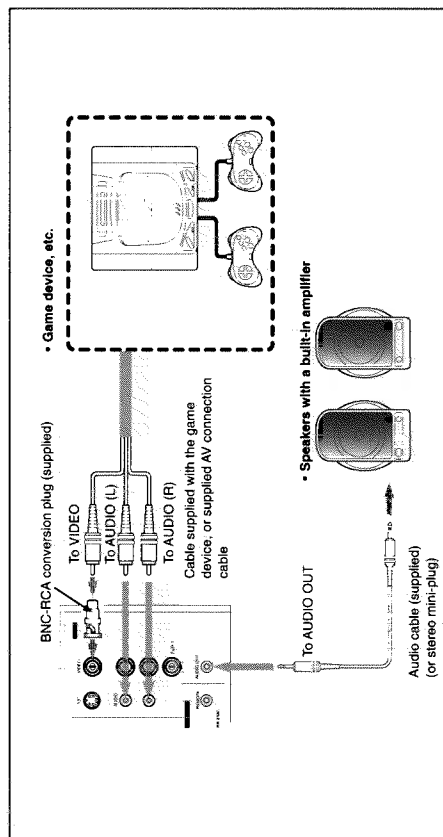
#### Notes

- Interface signals are not handled.
- Some signals other than listed above can be displayed. But they require adjustment. Even some of the signals listed above may require adjustment depending on the video board used.
- When a signal other than listed above is input, the screen could be partially erased or an unneeded fold-over screen could appear.
- Even signals in the frequency range that can be input may not be displayed normally depending on the type of the signal.
- Composite sync(Cs) and G on sync signals can not be handled depending on the devices connected.

## Connecting to Various Devices (Cont.)

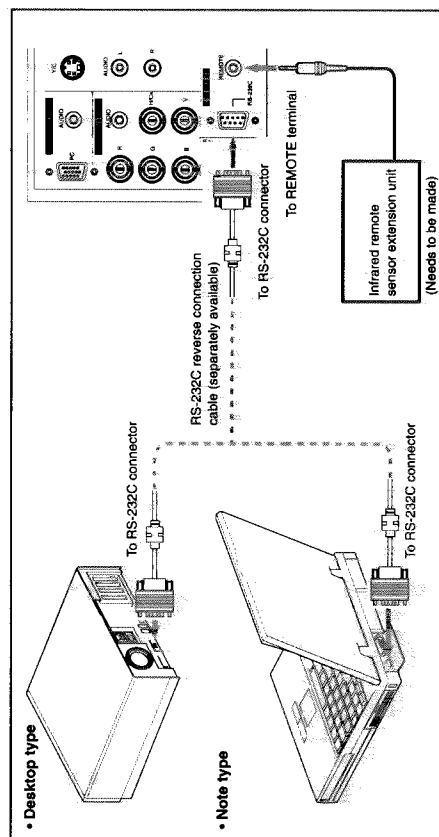
## Connecting to Other Devices

- Before connection, be sure to turn off both the projector and other devices to be connected.**
- Read the manual thoroughly which comes with the device to be connected.
  - Speakers with a built-in amplifier and game devices can be connected. Use the AV connection cable and audio cable supplied, or the cable supplied with a game device.



## Connecting to Devices which Control the Projector

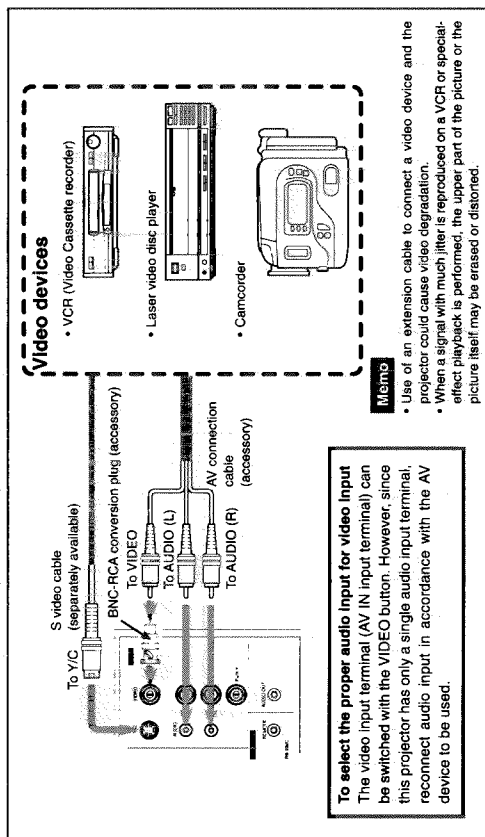
- Before connection, be sure to turn off both the projector and devices to be connected.**
- Read the manual thoroughly which comes with each device to be connected.
  - By connecting a computer to the RS-232C terminal, you can control the projector. Also, you can make an infrared remote sensor extension unit and connect it to the REMOTE terminal of the projector.
  - Obtain connection cables as required.
  - For details, consult your JVC-authorized dealer or service centre.



## Connecting to Various Devices (Cont.)

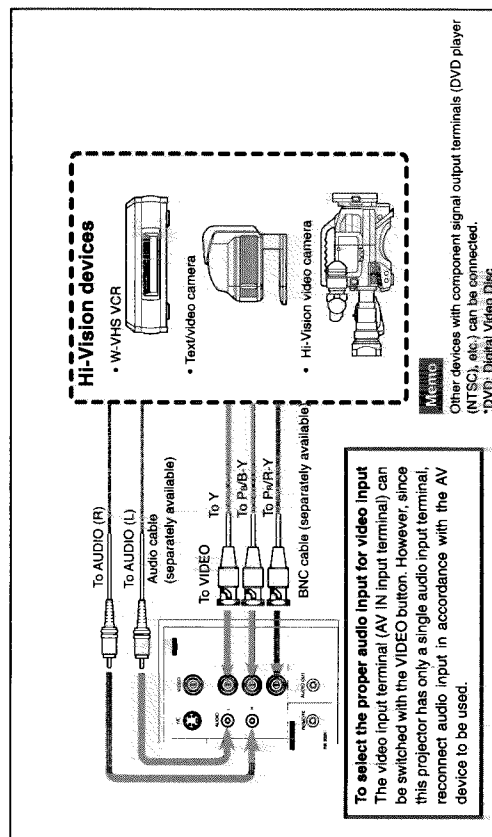
## Connecting to Video Devices

- Before connection, be sure to turn off both the projector and video device.**
- Read the manual which comes with each video device thoroughly.
  - Use the supplied AV connection cable. An AV connection cable with an S video terminal is not supplied.



## Connecting to Hi-Vision Devices

- Before connection, be sure to turn off both the projector and Hi-Vision devices.**
- Read the manual which comes with each Hi-Vision device thoroughly.
  - Use separately available BNC cables and audio cables to connect Hi-Vision devices.



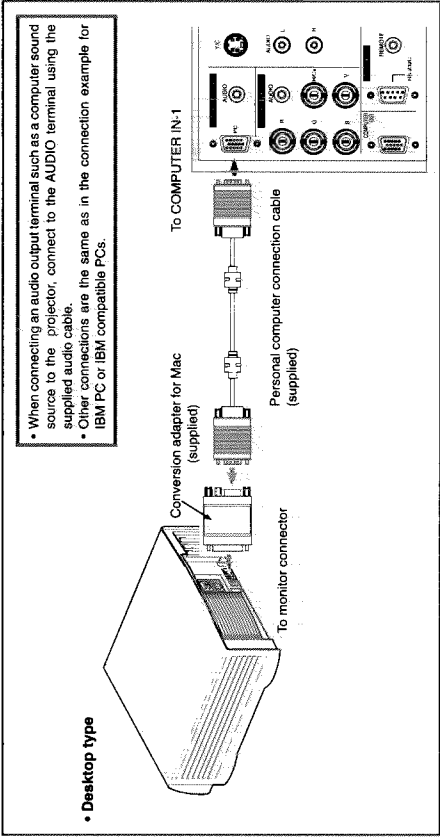
Connecting to Various Devices (Cont.)

Connecting to Computer Devices (Cont.)

Before connection, be sure to turn off both the projector and computer devices.

- Read the manual which comes with each device thoroughly.
- Use the supplied Personal computer connection cable and the supplied conversion adapter for Mac.

Connection to Macintosh

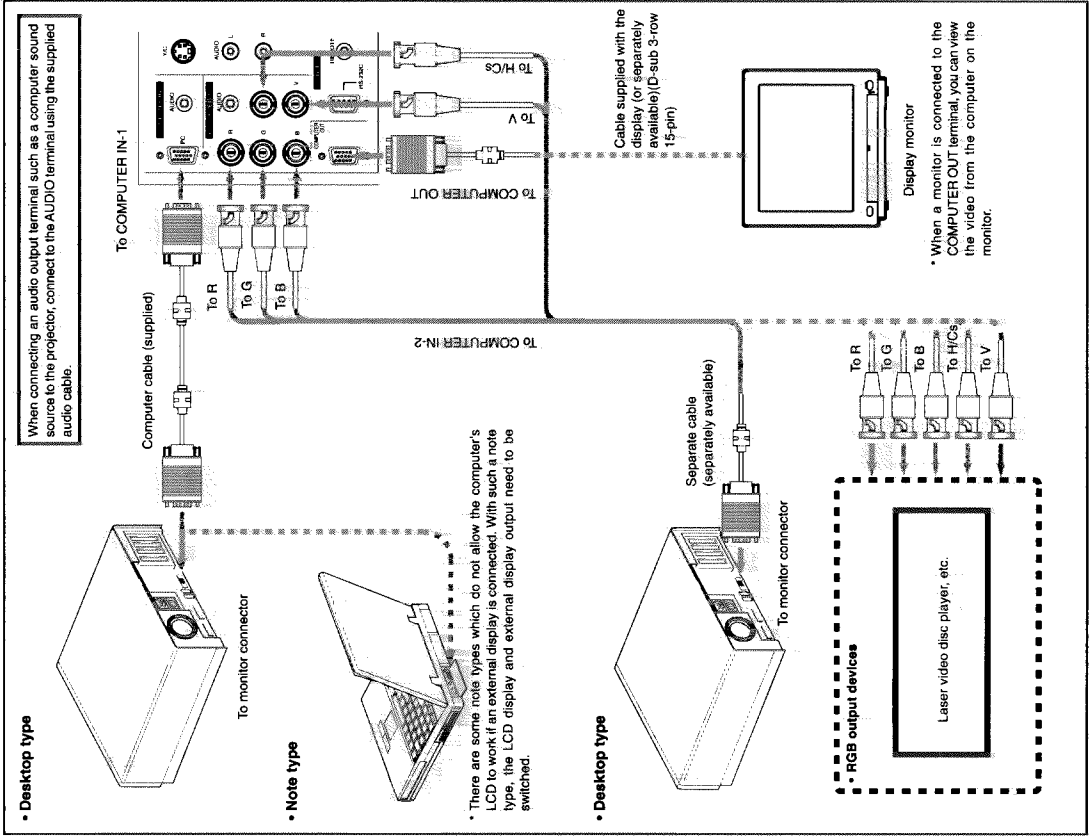


Connecting to Various Devices (Cont.)

Connecting to Computer Devices

Before connection, be sure to turn off both the projector and computer devices.

- Read the manual which comes with each device thoroughly.
- Connection to an IBM PC or IBM-compatible computer
- Use the supplied computer connection cable. Also, prepare cables required for connecting the devices connected.

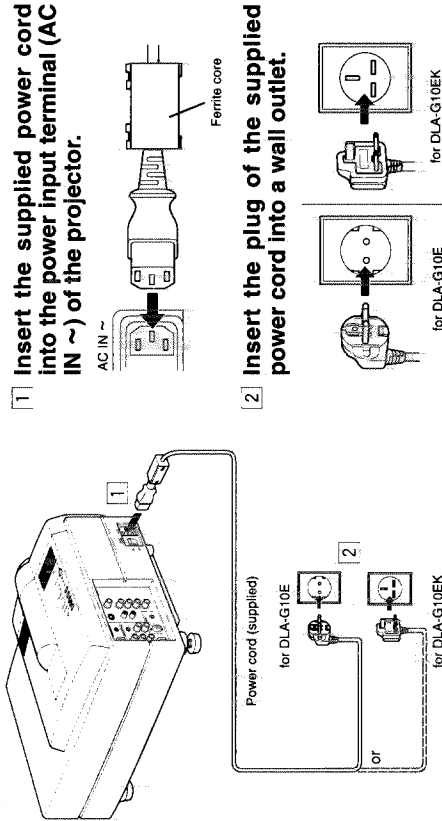




## Connecting to Various Devices (Cont.)

### Connecting the Power Cord (Supplied)

After all devices have finished being connected, connect the projector's power cord. At this time, do not turn on the MAIN POWER switch yet.



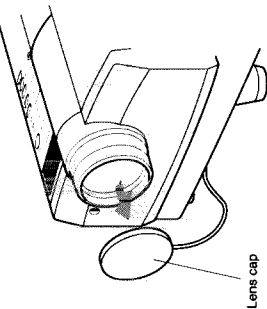
#### CAUTION

To prevent fire and electric shock, observe the following:

- When you do not use devices, pull out their power cords from wall outlets.
- Do not connect the devices with power cords other than supplied.
- Do not use voltage other than the power voltage indicated.
- Do not scar, damage, or work on the power cords. Also, do not put a heavy object on, heat or pull the power cords, otherwise they may be damaged.
- Do not insert or pull out the plugs with a wet hand.

#### CAUTION

- Since the power requirement of the projector is high, be sure to insert the power plug directly into a wall outlet.
- Use the supplied power cord with the ferrite core only.
- Do not remove the ferrite core from the supplied power cord; Otherwise, there may be a possibility that a harmful interference occurs.



#### To use the projector

- Remove the lens cap.

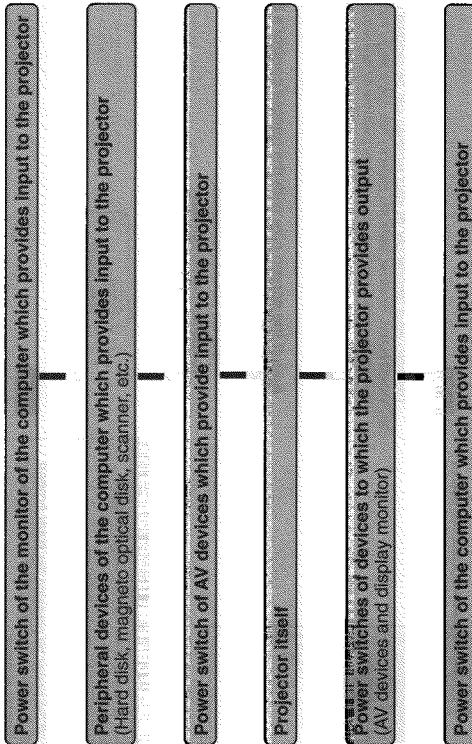
- The lens cap has a string attached and it is fixed to the projector.

Be sure to fit lens cap when not in use.

## Connecting to Various Devices (Cont.)

### When Turning On the Devices Connected to the Projector

Turn on the switches of the projector and the devices connected in the following order. Skip over unconnected devices if there is any.



- When turning off the power switches, do so in the reverse order.

#### Memo

When the OPERATE button is pressed but the power is not supplied:

If the filter or lamp replacement opening cover is displaced, the power is not supplied. Check them for correct installation.

#### CAUTIONS and NOTES

Do not turn off the MAIN POWER switch suddenly while the projector is being used or immediately after it has been used. This could cause a malfunction.

- Since the projector uses a high-intensity lamp and is heated to high temperature, cooling fans are operating even during projection. So, after use, the cooling fans continue to run from when the OPERATE button is pressed until the light-source lamp is cooled down. During cooling, the STAND BY indicator blinks to alert the cooling fans are running. During this time, do not turn off the main power switch. After the cooling of the light-source lamp is finished (the fans stop) and the STAND BY indicator comes on, then turn off the main power switch.
- If you press the OPERATE button immediately after the light-source lamp lights, it takes about 40 seconds for the lamp to go off. To turn the lamp on again, wait 10 seconds or more before pressing the OPERATE button.

When the TEMP indicator lights, the power turns off automatically.

- While the light-source lamp is on, if an abnormal temperature rise is detected, the TEMP indicator comes on, the power is automatically cut off, and the projector's EMERGENCY indicator blinks (goes into an emergency mode).

When the EMERGENCY indicator blinks, turn off the main power switch after the fans have stopped running.

- If the following anomalies occur to the projector, it goes into an emergency mode (the EMERGENCY indicator blinks).

When the projector goes into an emergency mode, it stops projecting automatically and runs the fans for about 20 seconds.

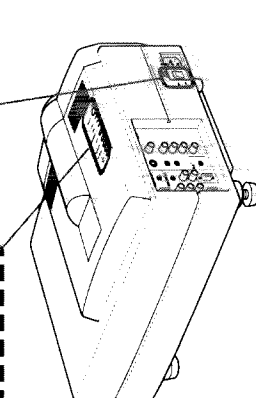
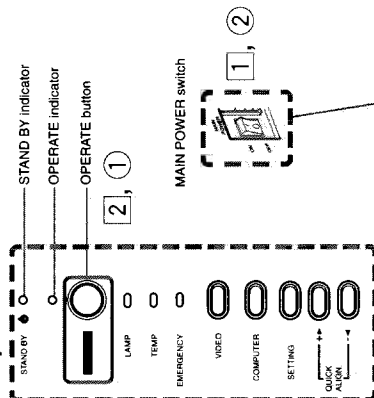
- When the filter is dislodged.
- When the filter is clogged.
- When the light-source lamp suddenly goes off.
- When the fans stop running.
- When the temperature inside rises abnormally high.

When the projector goes into an emergency mode:

After the fans have stopped, turn off the MAIN POWER switch and pull out the power cord. After that, re-insert the power cord and try to operate the projector. If it goes into emergency again, after the fans have stopped, turn off the main power switch, pull out the power cord, and consult your JVC-authorized dealer or service centre for repair.

## Basic Operations

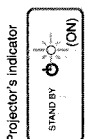
### Projector's buttons



### 1. Turning on the Power

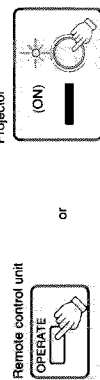
- 1 Turn on the MAIN POWER switch.

ON [ ]: The main power turns on and the STAND BY indicator comes on.



- 2 Press the OPERATE button. (Or press the remote control's OPERATE button for one second or more.)

- The OPERATE indicator comes on.
- About 30 seconds after the MAIN POWER switch is turned on, you can start projecting.



### Note

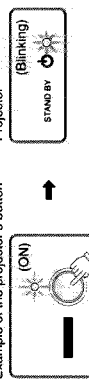
- After the power is turned on, the screen may be jumbled for a few seconds, but this is not a malfunction.

### Turning off the Power

- 1 Press the OPERATE button. (Or press the remote control's OPERATE button for one second or more.)

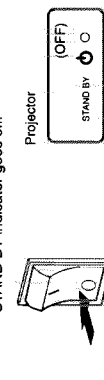
- The STAND BY indicator changes to blinking, and the projector goes into cool-down mode.

Example of the projector's button



- 2 Turn off the MAIN POWER switch after the STAND BY indicator changes to steady on.

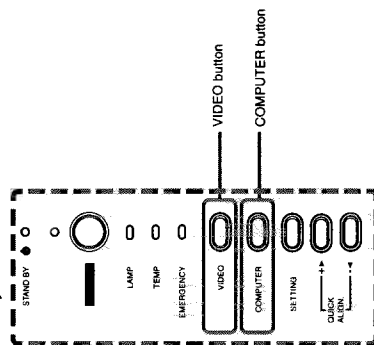
OFF [ ]: The MAIN POWER switch turns off and the STAND BY indicator goes off.



- Do not turn off the MAIN POWER switch during cool down mode (the STAND BY indicator blinking). Turn it off after the STAND BY indicator becomes on (stand-by mode).

## Basic Operations (Cont.)

### Projector's buttons



### 2. Select the video input to be projected

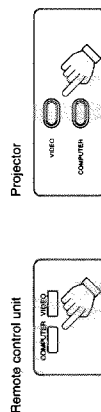
Press the VIDEO button or the COMPUTER button to switch the Input.

- Each time you press either button, the selected input changes as follows.

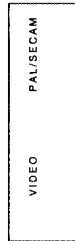
When you press VIDEO:  
Y/C → VIDEO → Y/P/B-Y/P/W-R-Y

When you press COMPUTER:

COMPUTER 1 → COMPUTER 2



Screen display



- When the input is switched, the line display (ex. VIDEO) and the source display (ex. PAL/SECAM) are shown on the upper part of the screen (they disappear in about five minutes). However, they will not be shown if LINE DISPLAY in "Setting and Adjusting Other Functions (OPTIONS)" on page 43 is set to OFF.  
(For setting the source, see page 46.)

### Note

- To select the proper audio input for video input  
The video input terminal (AV IN input terminal) can be switched with the VIDEO button. However, since this projector has only a single audio input terminal, reconnected audio input in accordance with the AV device to be used.

### 3. Adjust the screen size

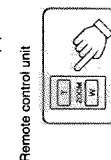
Adjust the screen size with the remote control's ZOOM (TW) buttons.

To enlarge the screen size:

Press the ZOOM (W) button.

To reduce the screen size:

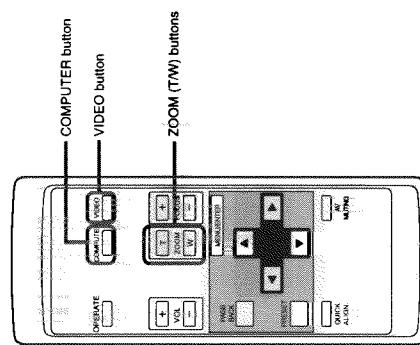
Press the ZOOM (T) button.



### Note

- The adjustment of the screen size (zoom adjustment) can also be made on the setting menu.  
For operating the setting menu, refer to "Making Basic Settings" on page 31.

### Remote control unit

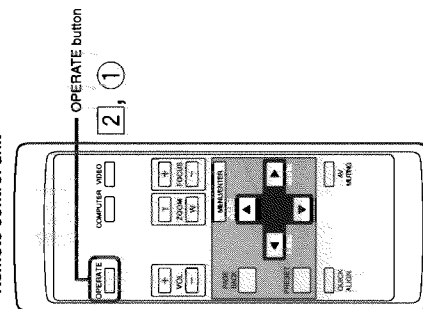


### ATTENTIONS

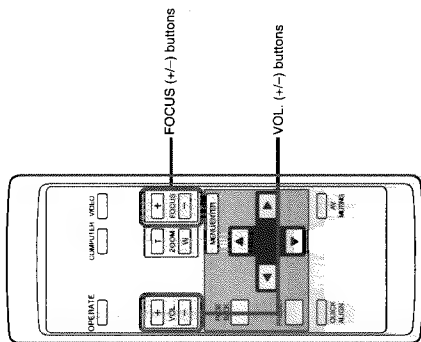
- DO NOT give any shock to this projector while operating it; otherwise, the light-source lamp goes off (the EMERGENCY indicator lights up).

If the shock turns off the light-source lamp —  
Turn off the power by pressing the MAIN POWER switch, then turn it on again. Now you can operate the projector as usual.

### Remote control unit



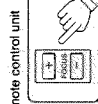
#### Remote control unit



#### 4. Adjust focus

**Adjust focus with the remote control's FOCUS (+/-) buttons.**

- To focus on farther points:**  
Press the FOCUS (+) button.
- To focus on nearer points:**  
Press the FOCUS (-) button.



#### Note:

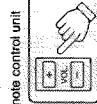
- Focus adjustment can also be made on the setting menu. For operating the setting menu, refer to "Making Basic Settings" on page 31.

#### 5. Adjust sound volume

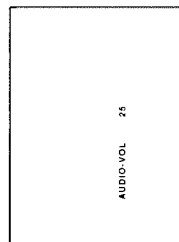
**Adjust sound volume with the remote control's VOL. (+/-) buttons.**

- When you press the VOL. (+) button:**  
The sound volume becomes higher. (0 → 50)
- When you press the VOL. (-) button:**  
The sound volume becomes lower. (50 → 0)

- When you press either button, the corresponding AUDIO-VOL. level is displayed on the screen (the display will disappear in about five minutes).



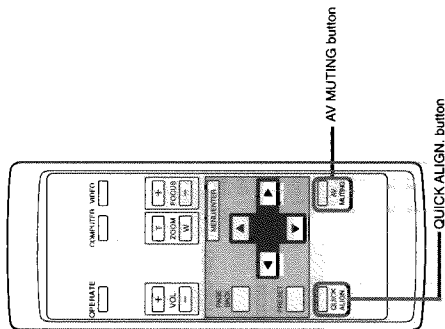
Screen display



#### Note:

- Sound volume can be adjusted on the setting menu. For operating the setting menu, refer to "Making Basic Settings" on page 31.

#### Remote control unit

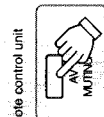


#### • For Operating Other Functions

**To turn off video image and audio sound temporarily**

Press the AV MUTING button.

- Press once:**  
Video image and audio sound turn off (do not come out).
- Press again:**  
Video image and audio sound come out again.



#### To use the quick alignment function

The quick alignment function is used to automatically adjust (set) the screen settings of "TRACKING, PHASE, H. POS. and V. POS." of computer system input video.

- Use either the remote control's or projector's button.

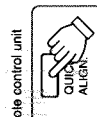
**When using the remote control unit:**

Press the QUICK ALIGN button.

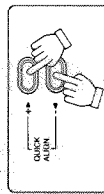
**When using the projector:**

Clear the menu display, and press the projector's QUICK ALIGN, "←" and "→" buttons at the same time.

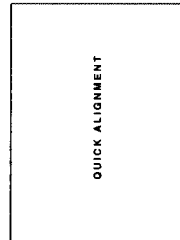
- During the automatic adjustment, "QUICK ALIGNMENT" appears on the screen and disappears automatically after the adjustment is completed.



Projector



Screen display



#### Note:

- This function works only for computer system inputs. It does not work for AV inputs.

#### CAUTION

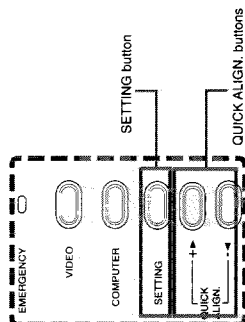
- When performing automatic adjustment using the quick alignment function:**  
Use a bright, still-picture screen. It may not function correctly on a dark or motion-picture screen.

If the condition adjusted by using the quick alignment function is not good, manually adjust TRACKING, PHASE, H. POS. and V. POS. (see pages 31, 37 and 38).

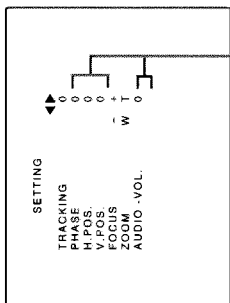
# Operating the Setting Menu

## Making Basic Settings

### Projector's buttons



### Setting menu



### Description of adjustment and setting items

- TRACKING** : If wide vertical stripes appear on the screen, adjust the lateral video size and display area so that they disappear. (-255 ↔ 0 ↔ +255)
- PHASE** : If characters on the screen flicker or become dim, adjust so they become clear. (-127 ↔ 0 ↔ +127)
- H. POS.** : If the screen position is displaced to the right or left, adjust the horizontal position of the screen. (-255 ↔ 0 ↔ +255)
- V. POS.** : If the screen position is displaced upward or downward, adjust the vertical position of the screen. (-120 ↔ 0 ↔ +120)
- FOCUS** : Adjust the focus of video picture.
  - : Focuses on near points.
  - + : Focuses on farther points.
- ZOOM** : Adjust the screen size (angle of view).
  - T : Becomes smaller.
  - W : Becomes larger.
- AUDIO-VOL.** : Adjust the sound level. (0 ↔ 50)

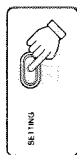
### To display the SETTING menu

The setting menu is used to make basic adjustments and settings (TRACKING, PHASE, H. POS., V. POS, FOCUS, ZOOM and AUDIO-VOL.) of the video picture being projected after installation (connection) or after inputs are switched. For operating the setting menu, refer to "Making Basic Settings" on page 31.

- Press the projector's SETTING button.

The setting menu is displayed on the screen.

Projector



### To display the MAIN menu

The main menu is used to adjust or set the projected video picture and the projector's condition, etc. (PIXEL CLOCK, POSITION, PICTURE, SOUND, OPTIONS, SOURCE DECODER and LANGUAGE). For operating the main menu, refer to pages 34 to 47.

- Press the remote control's MENU/ENTER button.

The main menu appears on the screen.

Remote control unit



### Note

- To change the menu language displayed  
English is selected when the projector is shipped from the factory. The language displayed can be selected from the following six languages: 日本語 (Japanese), ENGLISH, DEUTSCH (German), ESPAÑOL (Spanish), ITALIANO (Italian), and FRANÇAIS (French). However, some words such as "QUICK ALIGNMENT" are displayed only in English. Proper names such as line display and source display are similarly treated.

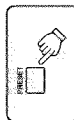
### To use the remote control's PRESET button

The PRESET button is used for adjustments made on the main menu or setting menu.

- When resetting only the selected settings to the factory-set values, press the remote control's PRESET button.

Only the selected item's setting is reset to the factory-set value.

Remote control unit

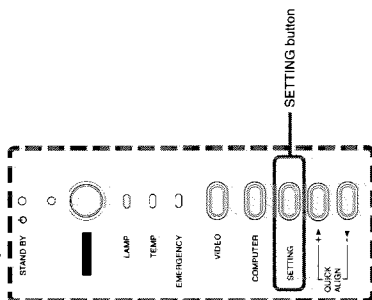


### Notes

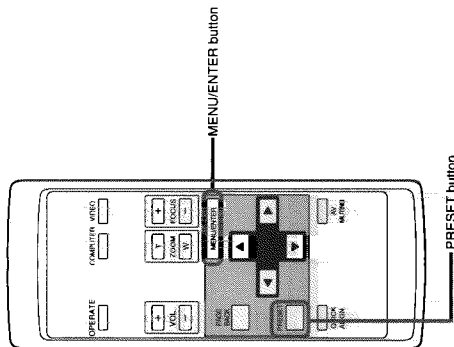
- This button works only for numeric values. It does not work for switching between ON and OFF.
- For items such as PIXEL CLOCK (TRACKING and PHASE), POSITION (H. POS. and V. POS.), SOUND (TREBLE and BASS), both settings are reset at the same time.

## Basic Operations (Cont.)

### Projector button



### Remote control unit



Here, we make basic video adjustment and sound volume adjustment which are set up after installation (connection).

### Notes

- This adjustment menu (setting menu) can be displayed with only the projector's button. After displaying the setting menu, you can select or set (adjust) items with cursor buttons on the remote control unit.
- If settings and connections are changed, adjust and set those items again.
- After this adjustment (setting menu), if video picture adjustment is necessary, the video picture can be adjusted by the details setting and adjustment of the main menu (pages 34 to 47).
- For computer-related inputs, use of the quick alignment function allows automatic adjustment of TRACKING, PHASE, H. POS. and V. POS. (See pages 31, 37 and 38).

## 1 Press the SETTING button of the projector.

- The setting menu is displayed on the screen.

## 2 Press the SETTING button to select the desired item.

- The selected item is shown in magenta colour. Each time you press the button, the selected item changes as follows:



### Memo

To select items using the remote control unit:  
Items can be selected using the cursor buttons ▲ (backward) or ▼ (forward) on the remote control unit. In this case, menu clearing in the above order is not available. The selection changes from AUDIO-VOL to TRACKING directly.

## 3 Adjust and set the selected item using the QUICK ALIGN. buttons +> or <-.

- To adjust and set multiple items, repeat steps 2 and 3.
- To reset the adjustment value of the selected item (TRACKING, PHASE, H. POS. or V. POS.) to the factory-set value, press the remote control's PRESET button. This button does not work for focus, zoom or sound volume.

### Memo

To adjust and set items using the remote control unit:  
Items can be adjusted and set using the cursor buttons ▲ or ▼ on the remote control unit.

## 4 Clear the setting menu by pressing the SETTING button repeatedly.

### Memo

To clear the setting menu using the remote control unit:  
You can also clear the setting menu by pressing the PAGE BACK button on the remote control unit.

### Memo

Using the quick alignment function:  
See page 29.

# Operating the Main Menu

## Configuration of the Main Menu (AV Input) For computer inputs, see the following page.

You can adjust video quality (PICTURE), audio quality (SOUND), etc. using the menus. The menus are configured as follows.

Main menu (AV inputs : During AV IN input signal)

<b>PIXEL CLOCK TRACKING PHASE</b>	: Normally, no adjustment is required. The lateral size and display area of video image are adjusted. : Normally, no adjustment is required. Flickering or dim video image is adjusted.
<b>POSITION</b>	V. POS. H. POS. : The vertical position of the video image being projected is adjusted. : The horizontal position of the video image being projected is adjusted.
<b>PICTURE</b>	BRIGHTNESS : The brightness of the video image being projected is adjusted. CONTRAST : The contrast of the video image being projected is adjusted. SHARPNESS : The sharpness of the video image being projected is adjusted. COLOR : The colour density of the video image being projected is adjusted. TINT : The tint of the video image being projected is adjusted. (Displayed only for NTSC signal) ALL RESET : All the items adjusted are reset.
<b>SOUND</b>	TREBLE : The treble of the audio sound being input is adjusted. BASS : The bass of the audio sound being input is adjusted.
<b>OPTIONS</b>	MENU AUTO OFF : Sets whether to turn off menu display automatically (YES) or not (NO). LINE DISPLAY : Sets whether to make the line display effective (ON) or not (OFF) for about 5 seconds after input switching. RIGHT LEFT REV : Video image is reversed right-to-left (for upside-down hanging (ceiling)). TOP BOTTOM INV : Video image is inverted top-to-bottom (for upside-down hanging (ceiling)). CLAMP : Sets the clamp pulse's position at the back porch (BP) or on the sink tip (ST). Normally, the clamp pulse is used at BP. If, with some PCs or workstations, the screen becomes unstable such as being too dark or too bright, try to switch to ST. RESIZE : Does not work with AV (video) input. (RESIZE is shown in gray) BACK COLOR : Specifies the background colour when there is no video signal. Background colour can be selected from BLUE, CYAN, BLACK, GREEN, MAGENTA, RED, and YELLOW. COLOR TEMP. : Adjusts the colour temperature of the image being projected. Make adjustment when the image becomes reddish or bluish. Colour temperature can be set to LOW, MIDDLE, or HIGH.
	ASPECT CHANGE : Selects the vertical-to-horizontal ratio of the image projected. The factory-set ratio is 4 : 3. When projecting high-vision video image, a ratio of 16 : 9 can be selected.
	SLEEP TIME : Sets the length of sleep time. A set sleep time after input signal is depleted, the projector goes into a stand-by state. Sleep time can be selected from 10 minutes, 20 minutes, 30 minutes, and 60 minutes.
	LAMP TIME : Indicates the accumulated used hours of the light-source lamp.
<b>SOURCE</b>	: Normally used in AUTO. If use in AUTO is unstable such as colour not appearing, the screen being disturbed or the screen being intermitted, set to the dedicated source (forced mode) in accordance with the input signal.
<b>DECODER</b>	: Normally, set to AUTO. The colour system of an input signal is automatically identified and shown in ( ). When use in AUTO is unstable such as no colour being shown, set the dedicated colour system in accordance with the input signal. You can select from AUTO, NTSC, NTSC4.43, PAL, and SECAM.
<b>LANGUAGE</b>	: Text on the screen can be changed to a language other than English. Languages that can be displayed are the following six : 日本語 (Japanese), ENGLISH, DEUTSCH (German), ESPAÑOL (Spanish), ITALIANO (Italian), and FRANÇAIS (French). However, some text such as "QUICK ALIGNMENT", etc. are shown only in English.

# Operating the Main Menu (Cont.)

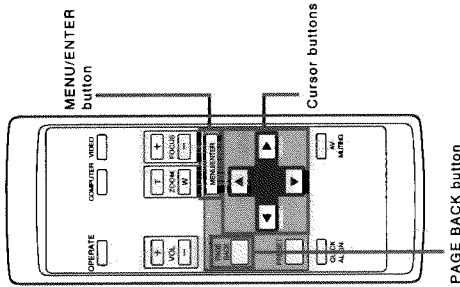
## Configuration of the Main Menu (Computer-related input)

Main menu (Computer-related inputs : During COMPUTER IN-1 or -2 input signal)

<b>PIXEL CLOCK TRACKING PHASE</b>	: The lateral size and display area of video image are adjusted. : Flickering or dim video image is adjusted.
<b>POSITION</b>	V. POS. H. POS. : The vertical position of the video image being projected is adjusted. : The horizontal position of the video image being projected is adjusted.
<b>PICTURE</b>	BRIGHTNESS : The brightness of the video image being projected is adjusted. CONTRAST : The contrast of the video image being projected is adjusted. R-GAIN : The gain in red signal of the video image being projected is adjusted. G-GAIN : The gain in green signal of the video image being projected is adjusted. B-GAIN : The gain in blue signal of the video image being projected is adjusted. TEXT MODE : Adjust easiness for reading text during RESIZE. NORMAL : Normal TEXT 1 : Display the outline of small letters clearly. TEXT 2 : Makes the outline of large letters sharp.
<b>SOUND</b>	ALL RESET : All the items adjusted are reset. TREBLE : The treble of the audio sound being input is adjusted. BASS : The bass of the audio sound being input is adjusted.
<b>OPTIONS</b>	MENU AUTO OFF : Sets whether to turn off menu display automatically (YES) or not (NO). LINE DISPLAY : Sets whether to make the line display effective (ON) or not (OFF) for about 5 seconds after input switching. RIGHT LEFT REV : Image is reversed right-to-left (for upside-down hanging (ceiling)). TOP BOTTOM INV : Image is inverted top-to-bottom (for upside-down hanging (ceiling)). CLAMP : Sets the clamp pulse's position at the back porch (BP) or on the sink tip (ST). Normally, the clamp pulse is used at BP. If, with some PCs or workstations, the screen becomes unstable such as being too dark or too bright, try to switch to ST. RESIZE : When the number of pixels (resolution) sought by the video image input is smaller than that (resolution) of D-ILA device, the video image is then enlarged to a virtually full screen size of D-ILA device and projected. (Resizing indication) BACK COLOR : Specifies the background colour when there is no image signal. Background colour can be selected from BLUE, CYAN, BLACK, GREEN, MAGENTA, RED, and YELLOW. COLOR TEMP. : Adjusts the colour temperature of the video image being projected. Make adjustment when the video image becomes reddish or bluish. Colour temperature can be set to LOW, MIDDLE, or HIGH.
	ASPECT CHANGE : Selects the vertical-to-horizontal ratio of the video image projected. The factory-set ratio is 4 : 3. When projecting high-vision image, a ratio of 16 : 9 can be selected.
	SLEEP TIME : Sets the length of sleep time. A set sleep time after input signal is depleted, the projector goes into a stand-by state. Sleep time can be selected from 10 minutes, 20 minutes, 30 minutes, and 60 minutes.
	LAMP TIME : Indicates accumulated used hours of the light-source lamp.
<b>SOURCE</b>	: Normally used in AUTO. If use in AUTO is unstable such as colour not appearing, the screen being disturbed or the screen being intermitted, set to the dedicated source (forced mode) in accordance with the input signal.
<b>DECODER</b>	: Does not work with computer-related inputs. (The colour system is indicated in gray.)
<b>LANGUAGE</b>	: Text on the screen can be changed to a language other than English. Languages that can be displayed are the following six : 日本語 (Japanese), ENGLISH, DEUTSCH (German), ESPAÑOL (Spanish), ITALIANO (Italian), and FRANÇAIS (French). However, some text such as "QUICK ALIGNMENT", etc. are shown only in English.

Operating the Main Menu (Basic Operation of the Main Menu)

Remote control unit



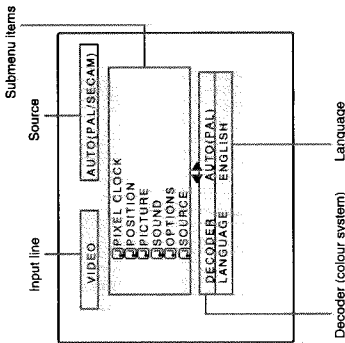
For projector's menus, the setting menu and the main menu are available.  
Here, we explain about the operation of the main menu. (see pages 34 to 47)  
For the setting menu, refer to "Making Basic Settings" on page 31.

- 1 Press the MENU/ENTER button.**
  - The main menu is displayed on the screen.
- 2 Select an item with the cursor button ▲ or ▼.**
  - The selected item (displayed text) is shown in magenta colour on the screen.

- 3 Set (adjust) the item.**
  - When you have selected **DECODER** or **LANGUAGE**,
    - Set it with the cursor button ◀ or ▶.
    - To finish the main menu, press the PAGE BACK button.
  - When you have selected an item on the submenu,
    - Press the MENU/ENTER button to display the submenu, then set (adjust) the item with the cursor buttons ◀/▶ or ▲/▼.
    - To return to the main menu, press PAGE BACK again. (To finish the main menu from the submenu, press PAGE BACK twice.)

Main menu

(Example: During video signal input)



About main menu display:

**Line display:** The selected input-mode designation is displayed. For input-mode designation, "Y", "C", "VIDEO", "Y, P/B-Y, P/R-Y", "COMPUTER 1" and "COMPUTER 2" are available.

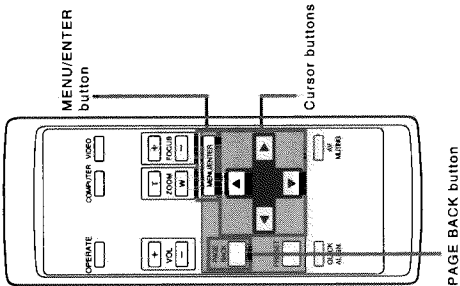
**Source display:** The type of signal being input is displayed. With this projector, unique designations are previously given to specific horizontal and vertical frequencies. This allows the source selected under SOURCE (submenu item) to be indicated. The source setting can be selected from AUTO mode and dedicated (forced) modes. When AUTO is selected, the horizontal and vertical frequencies of a signal being input are detected and the matched designation is displayed in ( ).  
Display example: "AUTO (PAL/SECAM)"  
Therefore, be careful as the source display does not always correspond to the indication or type of the input signal.  
For the unique designations for the specific horizontal and vertical frequencies, see pages 19 and 46.

Submenu item display:

- PIXEL CLOCK : See page 37.
  - POSITION : See page 38.
  - PICTURE : See pages 39-41.
  - SOUND : See page 42.
  - OPTIONS : See pages 43-45.
  - SOURCE : See pages 46 and 47.
- Decoder (colour system) display :** See page 35.  
**Language display :** See page 36.

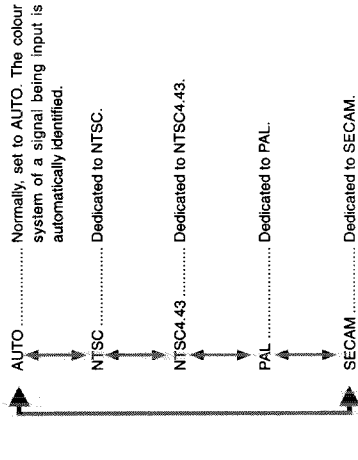
Changing the Colour System

Remote control unit



AUTO is set for the colour system when the projector is shipped from the factory. Normally, use it in AUTO. If operation in AUTO is unstable such as with color not being shown, set to a dedicated colour system in accordance with the colour system of the signal being input.

- 1 Press the MENU/ENTER button.**
  - The main menu is shown on the screen.
- 2 Select "DECODER" with the cursor button ▲ or ▼.**
  - The selected item (displayed in text) is shown in magenta colour on the screen.
- 3 Set the colour system with the cursor button ◀ or ▶.**
  - Each time you press the cursor button ◀ or ▶, the colour system changes as follows.
    - ▶ : Forward / ◀ : Backward



Memo

**About automatic signal identification**  
• AUTO is selected when shipped from the factory. In AUTO, the colour system (DECODER) of the signal being input is automatically identified and indicated in ( ). Refer to the main menu display.  
• If operation in AUTO is unstable such as with colour not being shown, set to a dedicated colour system in accordance with the colour system of the signal being input. When the dedicated colour system is set, be careful as automatic identification does not work.

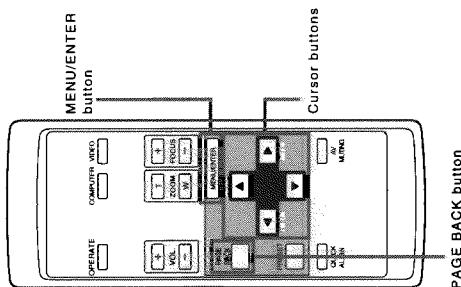
- To finish the main menu, press the **PAGE BACK** button.

Note

• When computer-related signal is input, the display of the colour system is changed to gray colour, making operation impossible. When video signals from AV devices are input, the item for the colour system can be set.

## Changing the Language Display

### Remote control unit



#### 1 Press the MENU/ENTER button.

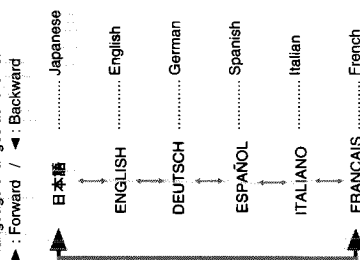
- The main menu is shown on the screen.

#### 2 Select "LANGUAGE" with the cursor button ▲ or ▼.

- The selected item (displayed in text) is shown in magenta colour on the screen.

#### 3 Set the desired language with the cursor button ◀ or ▶.

- Each time you press the cursor button ◀ or ▶, the selected language changes as follows.



#### Memo

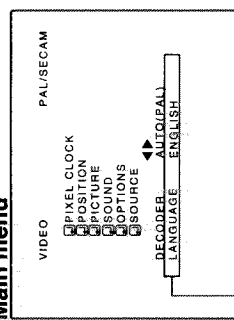
##### About language display

English is selected when the projector is shipped from the factory. The languages in the menu display are the following six: 日本語 (Japanese), ENGLISH, DEUTSCH (German), ESPAÑOL (Spanish), and FRANÇAIS (French).

However, some text such as "QUICK ALIGNMENT" is displayed only in English. Unique designations such as line display and source display are similarly indicated.

#### ● To finish the main menu, press the PAGE BACK button.

### Main menu

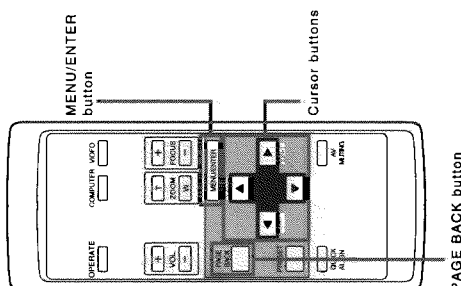


#### Note

- The selected item is shown in magenta colour. Items shown in gray cannot be operated or set in the current mode.

## Adjusting the Pixel Clock

### Remote control unit



#### 1 Press the MENU/ENTER button.

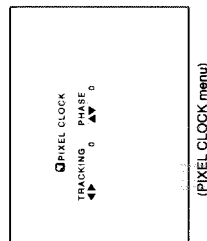
- The main menu appears on the screen.

#### 2 Select "PIXEL CLOCK" with the cursor button ▲ or ▼.

- The selected item (displayed in text) is shown in magenta colour on the screen.

#### 3 Press the MENU/ENTER button.

- The submenu items of the PIXEL CLOCK menu appears on the screen.



#### 4 Adjust "TRACKING" and "PHASE" with the cursor buttons.

- Adjust the tracking and phase of the video screen being projected. To adjust the phase, first check for correct tracking adjustment.

Adjustment item	Button	Adjustment content
TRACKING	◀	The screen shrinks laterally (right-to-left). (-255 ← 0 ← +255)
	▶	The screen extends laterally (right-to-left). (-255 → 0 → +255)
PHASE	▲	Set to a position where text appears clear.
	▼	(-127 → 0 → +127)

- To reset to the factory-set adjustment values, press the remote control's PRESET button.

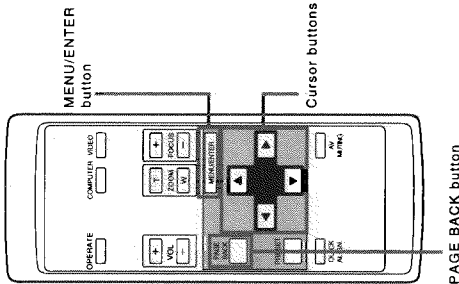
Tracking and phase are reset to the factory-set adjustment values.

#### ● To return to the main menu, press the PAGE BACK button. To finish the main menu, press PAGE BACK again.

- To finish the menu display from the submenu display (PIXEL CLOCK menu), press PAGE BACK twice.

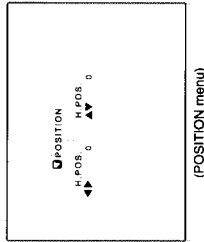
Adjusting the Screen Position

Remote control unit



Adjust the position of the screen if it is displayed.

- 1 Press the MENU/ENTER button.
  - The main menu appears on the screen.
- 2 Select "POSITION" with the cursor button ▲ or ▼.
  - The selected item (displayed in text) is shown in magenta colour on the screen.
- 3 Press the MENU/ENTER button.
  - The submenu items of the POSITION menu appear on the screen.



4 Adjust "H. POS." and "V. POS." with the cursor buttons.

- Adjust the horizontal and vertical positions of the video picture screen being projected.

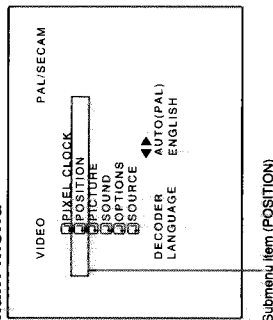
Adjustment Item	Button	Adjustment content
H. POS.	◀	The screen moves to the left. (-255 ← 0 ← +255)
	▶	The screen moves to the right. (-255 → 0 → +255)
V. POS.	▲	The screen moves upwards. (-120 → 0 → +120)
	▼	The screen moves downwards. (-120 ← 0 ← +120)

- To reset to the factory-set adjustment values, press the remote control's PRESET button. H. POS. and V. POS. are reset to the factory-set adjustment values.

• To return to the main menu, press the PAGE BACK button. To finish the main menu, press the PAGE BACK again.

- To finish the menu display from the submenu display (POSITION menu), press PAGE BACK twice.

Main menu



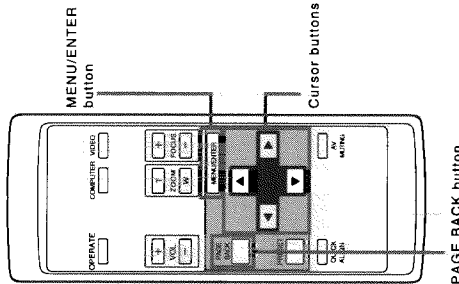
Note

- The selected item is shown in magenta colour. Items shown in gray colour cannot be operated or set in the current mode.

Operating the Main Menu (Cont.)

Adjusting Picture Quality

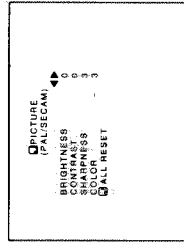
Remote control unit



Adjust brightness, contrast, etc. so you have the desired screen. Adjustment items (on the PICTURE menu) are different when video-related signals are input and when computer-related signals are input.

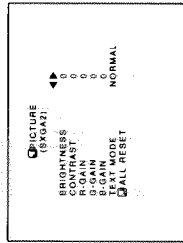
- 1 Press the MENU/ENTER button.
  - The main menu appears on the screen.
- 2 Select "PICTURE" with the cursor button ▲ or ▼.
  - The selected item (displayed in text) is shown in magenta colour on the screen.
- 3 Press the MENU/ENTER button.
  - The submenu items of the PICTURE menu appear on the screen.

When AV signals are input



(PICTURE menu)

When computer-related signals are input



(PICTURE menu)

4 Select the item to adjust with the cursor button ▲ or ▼.

- The items to adjust (shown in text) is displayed in magenta colour.

Notes

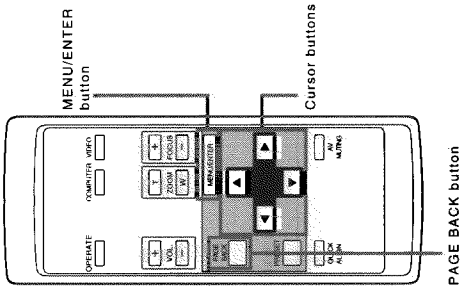
- The selected item is shown in magenta colour. Items shown in gray colour cannot be operated or set in the current mode.
- Adjustment items (on the PICTURE menu) are different when AV signals are input and when computer-related signals are input.



Operating the Main Menu (Cont.)

Adjusting Picture Quality (Cont.)

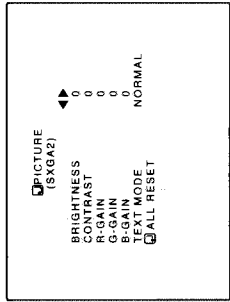
Remote control unit



PAGE BACK button

Submenu items

[PICTURE menu]



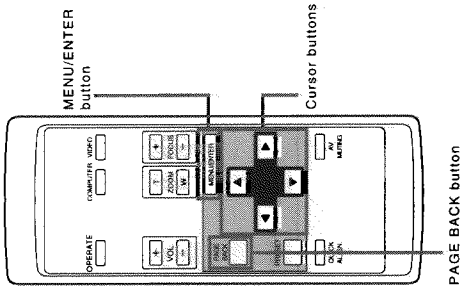
Notes

- The selected item is shown in magenta colour. Items shown in gray colour cannot be operated or set in the current mode.
- Adjustment items (on the PICTURE menu) are different when AV signals are input and when computer-related signals are input.

Operating the Main Menu (Cont.)

Adjusting Picture Quality (Cont.)

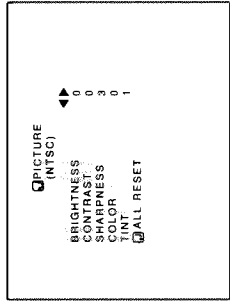
Remote control unit



PAGE BACK button

Submenu items

[PICTURE menu]



Notes

- The selected item is shown in magenta colour. Items shown in gray colour cannot be operated or set in the current mode.
- Adjustment items (on the PICTURE menu) are different when AV signals are input and when computer-related signals are input.

5 Make adjustment with the cursor button ◀ or ▶.

For video system input

- To adjust multiple items, repeat steps 4 and 5.
- To reset all items (to factory-set adjustment values "0"), select ALL RESET with the cursor buttons and press the MENU/ENTER button.
- To reset only the selected items (ALL RESET excluded) to the factory-set adjustment value, press the remote control's PRESET button. The selected item is reset to the factory-set adjustment value.

Adjustment item	Button	Adjustment content
BRIGHTNESS	◀	Gets darker. (-30 ← 0 ← +30)
	▶	Gets brighter. (-30 → 0 → +30)
CONTRAST	◀	Gets lower. (-30 ← 0 ← +30)
	▶	Gets higher. (-30 → 0 → +30)
SHARPNESS	◀	Gets softer. (0 ← 7)
	▶	Gets sharper. (0 → 7)
COLOR	◀	Gets softer. (-30 ← 0 ← +30)
	▶	Gets deeper. (-30 → 0 → +30)
TINT	◀	Gets reddish. (-30 ← 0 ← +30)
	▶	Gets greenish. (-30 → 0 → +30)
ALL RESET	MENU/ENTER	Resets all adjustment values of items on the PICTURE menu to the factory-set values (0).

\*COLOR=COLOUR

Note

- The adjustment item, TINT, is displayed only for NTSC system. It is not displayed (cannot be adjusted) when PAL or SECAM system signals are input.
- When video signals are input to the COMPUTER IN-2 terminal, adjustment items "COLOR" and "TINT" are indicated but cannot be adjusted.

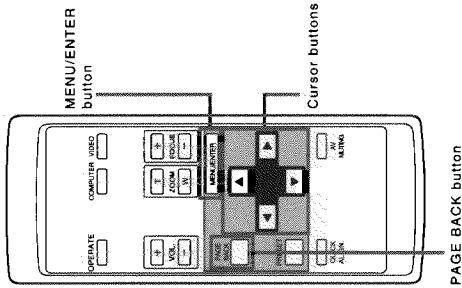
For computer system input

- To adjust multiple items, repeat steps 4 and 5.
- To reset all items (to factory-set adjustment values "0"), select ALL RESET with the cursor buttons and press the MENU/ENTER button.
- To reset only the selected items (ALL RESET excluded) to the factory-set adjustment value, press the remote control's PRESET button. The selected item is reset to the factory-set adjustment value.

(To be continued on the next page)

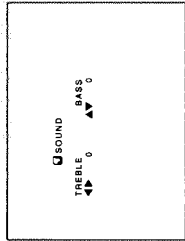
Adjusting Sound Quality

Remote control unit



Adjust the quality (treble/bass) of sound.

- 1 Press the **MENU/ENTER** button.
  - The main menu appears on the screen.
- 2 Select the **"SOUND"** with the cursor button **▲** or **▼**.
  - The selected item (displayed in text) is shown in magenta colour on the screen.
- 3 Press the **MENU/ENTER** button.
  - The submenu items of the **SOUND** menu appear on the screen.



(SOUND menu)

4 Adjust **"TREBLE"** and **"BASS"** with the cursor buttons.

- Adjust the quality (TREBLE and BASS) of sound.

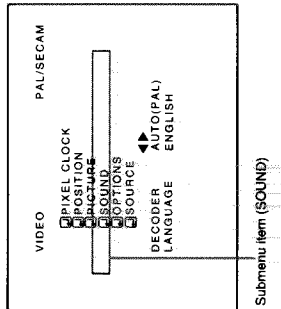
Adjustment Item	Button	Adjustment content
TREBLE	◀	Gets weaker. (-5 ← 0 ← +5)
	▶	Gets stronger. (-5 → 0 → +5)
BASS	▲	Gets stronger. (-5 → 0 → +5)
	▼	Gets weaker. (-5 ← 0 ← +5)

- To reset to the factory-set adjustment values, press the remote control's **PRESET** button. The treble and bass are reset to the factory-set adjustment values.

• To return to the main menu, press the **PAGE BACK** button. To finish the main menu, press **PAGE BACK** again.

- To finish the menu display from the submenu display (SOUND menu), press **PAGE BACK** twice.

Main menu

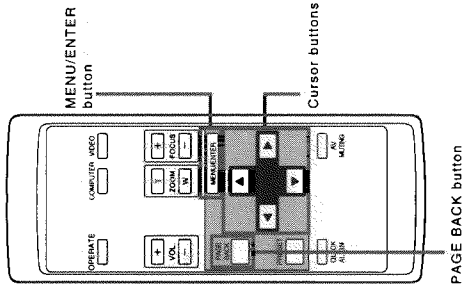


Note

- The selected item is shown in magenta colour. Items shown in gray colour cannot be operated or set in the current mode.

Setting and Adjusting Other Functions (OPTIONS)

Remote control unit



Memo

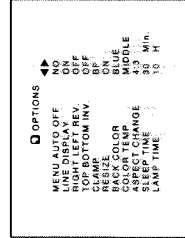
About the lamp use time

The lamp use time indicates the accumulated used hours of the light-source lamp and cannot be set or adjusted. When you have replaced with a new light-source lamp, reset the lamp use time (see page 50).

Note

- The **RESIZE** function works for only computer system input. It does not work for video system input.

- 1 Press the **MENU/ENTER** button.
  - The main menu appears on the screen.
- 2 Select the **"OPTIONS"** with the cursor button **▲** or **▼**.
  - The selected item (displayed in text) is shown in magenta colour on the screen.
- 3 Press the **MENU/ENTER** button.
  - The submenu items of the **OPTIONS** menu are displayed.



(OPTIONS menu)

4 Select the item to set (adjust) with the cursor button **▲** or **▼**.

- The item to set (adjust) is shown in magenta colour.

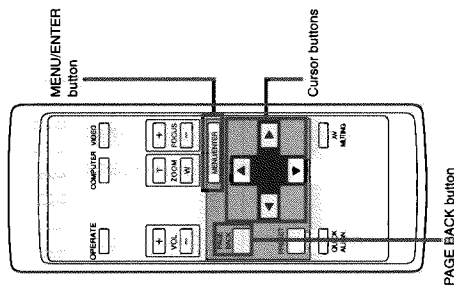
Note

- The selected item is shown in magenta colour. Items shown in gray colour cannot be operated or set in the current mode.
- Items to be set (adjusted) are different when AV signals are input and when computer system signals are input.

(To be continued on the next page)

## Setting and Adjusting Other Functions (OPTIONS) (Cont.)

### Remote control unit



### Submenu items

[OPTIONS menu]

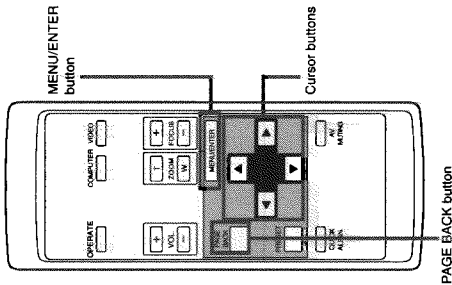
<p> <input type="checkbox"/> OPTIONS                      MENU AUTO OFF                      LINE DISPLAY EV.                      TOP BOTTOM INV.                      CLAMP                      RESIZE                      BACK COLOR                      COLOR TEMP.                      ASPECT CHANGE                      SLEEP TIME                      LAMP TIME                 </p>	<p>                     ◀ ▶                      NO                      ON                      OFF                      BP                      ON                      BLUE                      MIDDLE                      30 Min.                      4:3                      10 H.                 </p>
---	--

#### Notes

- The selected item is shown in magenta colour. Items shown in gray colour cannot be operated or set in the current mode.
- Items to be set (adjusted) are different when AV signals are input and when computer-system signals are input.
- When you turn the RESIZE function ON, allowing the screen to be enlarged virtually to its full size for projection (resizing display), the video image (resolution) becomes coarse.

## Setting and Adjusting Other Functions (OPTIONS) (Cont.)

### Remote control unit



### Submenu items

[OPTIONS menu]

<p> <input type="checkbox"/> OPTIONS                      MENU AUTO OFF                      LINE DISPLAY EV.                      TOP BOTTOM INV.                      CLAMP                      RESIZE                      BACK COLOR                      COLOR TEMP.                      ASPECT CHANGE                      SLEEP TIME                      LAMP TIME                 </p>	<p>                     ◀ ▶                      NO                      ON                      OFF                      BP                      ON                      BLUE                      MIDDLE                      30 Min.                      4:3                      10 H.                 </p>
---	--

#### Notes

- The selected item is shown in magenta colour. Items shown in gray colour cannot be operated or set in the current mode.
- Items to be set (adjusted) are different when AV signals are input and when computer-system signals are input.

Adjustment item	Button	Adjustment content
BACK COLOR	◀ ▶	Sets background colour when there is no input signal. (Factory setting: BLUE) BLUE ↔ CYAN ↔ BLACK ↔ GREEN
COLOR TEMP.	◀ ▶	Sets the colour temperature of the video image being projected. Make adjustment when the image becomes reddish or bluish. (Factory setting: MIDDLE) LOW : Colour temperature decreases (video image becoming reddish). MIDDLE : Results in middle colour temperature. HIGH : Colour temperature increases (video image becoming bluish). LOW ↔ MIDDLE ↔ HIGH
ASPECT CHANGE	◀ ▶	Sets the vertical-to-horizontal ratio (4 : 3 or 16 : 9) of the video image projected. (Factory setting: 4 : 3) 4 : 3 : The aspect ratio of the screen becomes 4 : 3. Set it to 4 : 3 for video of NTSC, NTSC4.43, PAL, SECAM. 16 : 9 : The aspect ratio of the screen becomes 16 : 9. Set it to 16 : 9 for Hi-Vision devices (W-VHS VCR, etc.). 4 : 3 ↔ 16 : 9
SLEEP TIME	◀ ▶	Sets the length of sleep time which automatically brings the projector into stand-by state. You can select one of the following sleep times : 10 minutes, 20 minute, 30 minutes, and 60 minutes. (Factory setting : 30 minutes) 10 ↔ 20 ↔ 30 ↔ 60

\*COLOR=COLOUR

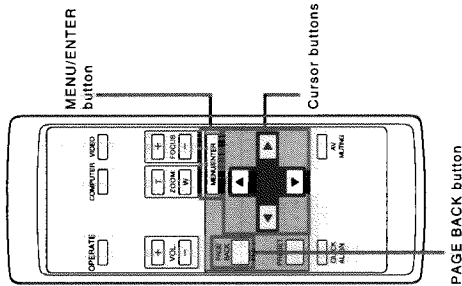
- To return to the main menu, press the PAGE BACK button. To finish the main menu, press PAGE BACK again.
- To finish the menu display from the submenu display (OPTIONS menu), press PAGE BACK twice.

#### Notes

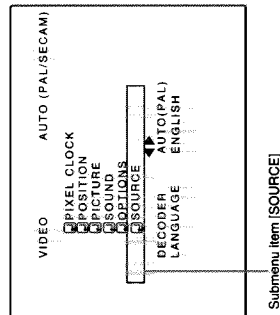
- When you view a conventional (normal) 4 : 3 video picture, which is not wide video picture, on the projector's screen the aspect change function, the upper and lower parts of the video picture become partially invisible. View such an original video picture in 4 : 3 mode, respecting the producer's intention.

Changing (Setting) the Source

Remote control unit



Main menu



Notes

- The selected item is shown in magenta colour. Items shown in gray colour cannot be operated or set in the current mode.
- Items that can be set are different when video signals are input and when computer signals are input.
- For dedicated source signals (corresponding frequency, etc.) for computer signals, see page 19.

Normally, use the source setting in AUTO. If use in AUTO is unstable such as colour not appearing, the screen being disturbed or the screen being intermittent, set to the dedicated source (forced mode) in accordance with the input signal.

- When shipped from the factory, the source settings are as follows:

Input mode	Factory setting	Input mode	Factory setting
VIDEO	PAL/SECAM	COMPUTER 1	AUTO
Y/C	PAL/SECAM	COMPUTER 2	AUTO
Y, Pb/B-Y, Pr/R-Y	AUTO		

Notes

- Depending on the signal from a device connected, adjustment may be needed after a dedicated source is set. If that is the case, adjust the appropriate items.
- When the input mode (SOURCE) is VIDEO or Y/C, and if AUTO is set, the automatic detecting function may work, possibly causing the screen to be intermittent or disturbed. In that case, set to a dedicated source (forced mode).
- When special effect playback (fast-forward/ twice-speed/triple-speed) is performed on a video deck, etc, the picture may be disturbed or intermittent, depending on the device.

1 Press the MENU/ENTER button.

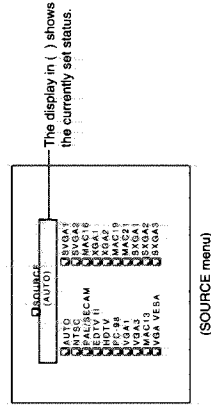
- The main menu appears on the screen.

2 Select a submenu item "SOURCE" using the cursor button ▲ or ▼.

- The SOURCE item (shown in text) is indicated in magenta colour.

3 Press the MENU/ENTER button.

- The submenu items, SOURCE menu, appears on the screen.



4 Select the item to set using the cursor buttons ▲/▼ or ◀/▶.

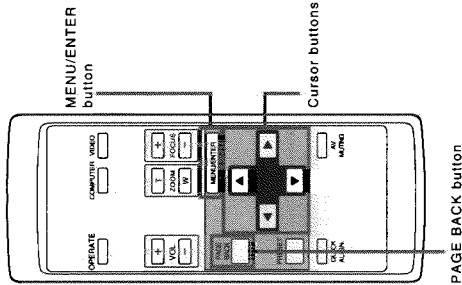
- The item to set is shown in magenta colour.



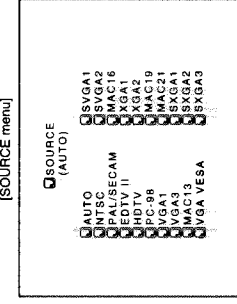
(To be continued on the next page)

Changing (Setting) the Source (Cont.)

Remote control unit



Submenu item



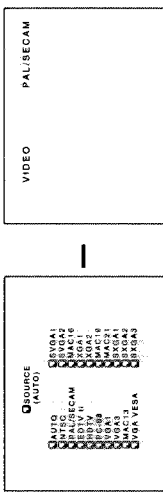
Notes

- The selected item is shown in magenta colour. Items shown in gray colour cannot be operated or set in the current mode.
- Items that can be set are different when video signals are input and when computer signals are input.
- For dedicated source signals (corresponding frequency, etc.) for computer signals, see page 19.

5 Press the MENU/ENTER button to set (fix) it.

When AUTO is selected:

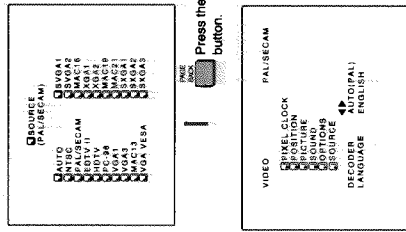
- The main menu is automatically cleared, completing the setting procedure, and the source display inputted appears.
- Both line display and source display appear on the screen and disappear in five seconds. However, they do not appear if the line display is set to OFF.



When other than AUTO is selected:

- The selected item is shown in ( ) beneath the indicated text "SOURCE" at the top of the screen, completing the setting procedure.

- To finish the menu display, press the PAGE BACK button twice (the first press returns you to the main menu and the second press clears it).



- Press the PAGE BACK button.
- The menu display is finished.

# Replacing the Light-Source Lamp

The light-source lamp has its service life. It is approximately 1000 hours.

When the light-source lamp approaches the end of its service life, its degradation progresses rapidly. When the lamp's used hours exceed 900 hours, the projector's LAMP indicator comes on. Also, at the start of projection (lamp energized), the message "REPL.-LAMP" appears on the projection screen for about two minutes. Then, replace with a new light-source lamp, or arrange for a replacement lamp. When lamp's service has reached 1000 hours, the projector's LAMP indicator starts blinking, and if you press the OPERATE button (or press the remote control's OPERATE button for more than one second), the light-source lamp does not turn on. The specified lamp replacement period is 1000 hours, but depending on use conditions, the replacement period may vary. If video image is dark and its colour tint is extraordinary even after you have adjusted colour tint and brightness, replace the light-source lamp a little earlier.

Purchase new light-source lamps (part No. : G10-LAMP-SU) from the JVC-authorized dealer where you have purchased the projector, or consult the nearest JVC Service center.

## CAUTIONS and NOTES

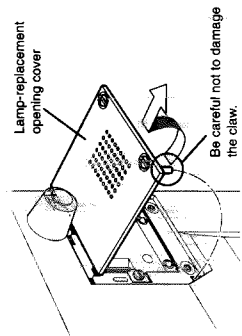
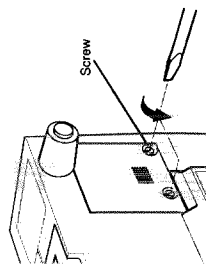
- If the projector is set up in a light place which is unsuitable for work, and if you perform replacement work there, this could hurt you. Move the projector to a place wide enough for work, and then replace the lamp.
  - Use a genuine product for the light-source lamp. If you use other than a genuine product, this could cause a malfunction. Also, never use an old light-source lamp. An old lamp could cause marked degradation in performance or explode itself, possibly causing the projector to malfunction. Also, its broken pieces could come out of the projector and harm you when replacing the light-source lamp.
  - Do not replace the light-source lamp immediately after the projector has been used. The temperature of the light-source lamp is still high and could cause a burn. Be sure to allow a cooling period of one hour or more before performing replacement work.
  - Before starting lamp replacement work, turn off the MAIN POWER switch (see page 26), and disconnect the power cord from the wall outlet. If you perform the replacement work with the power cord left connected, this could cause harm or electric shock.
  - Never discard an old light-source lamp (used lamp), as is. Otherwise, this could involve a great danger. The lamp contains a xenon gas inside, which is applying a high pressure. If the gas is not removed, it could cause the lamp to explode.
- For handling used lamps, refer to the manual supplied with the new replacement lamp you have purchased. If you have any questions, consult a JVC-authorized dealer where you have bought the replacement lamp or nearest JVC Service center.

## 1 Remove the lamp-replacement opening cover by loosening screws.

Loosen the two screws with a flat-end screwdriver.

### Note

- The screws are fitted so that they do not come off the lamp-replacement opening cover.



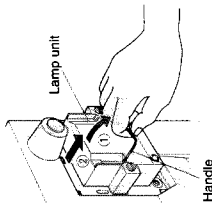
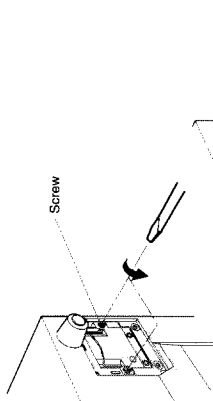
## Replacing the Light-Source Lamp (Cont.)

### 2 Loosen the lamp-unit screws, raise the handle, and pull out the lamp unit.

Loosen the two screws with a flat-end screwdriver.

### Note

- The screws are fitted so that they do not come off the lamp-unit.

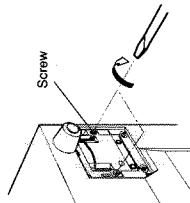
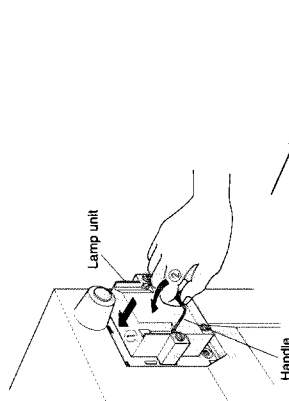


### 3 Insert the new lamp unit fully inside and fasten the screws.

Fasten the two screws with a flat-end screwdriver.

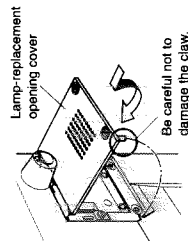
### CAUTION

- Do not touch the glass surface of the light-source lamp directly with your hand as well as staining it. If you touch with a bare hand, stains on your hand may adhere to the lamp, possibly preventing the lamp from performing as specified due to a shortened lamp life, a darkened screen, etc. To handle a new light-source lamp, hold its plastic part. Never touch the metal part or the front glass surface.



### 4 Replace the lamp-replacement opening cover and fasten the screws.

Fasten the two screws with a flat-end screwdriver.



### CAUTIONS

- Install the lamp unit and close the lamp-replacement opening cover correctly; otherwise, a safety switch is activated to prevent the projector from operating.
- If the claw on the lamp-replacement opening cover is damaged, the projector may not possibly operate. Then, replace with a new lamp-replacement opening cover.
- After replacing the lamp, be sure to reset the lamp use time (see page 50).

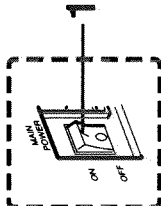
## Replacing the Light-source Lamp (Cont.)

### Resetting the Lamp Use Time

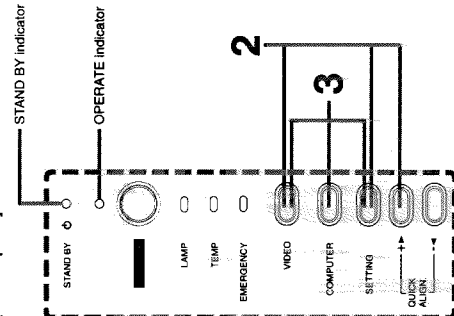
After replacing with a new light-source lamp, reset the counter inside the projector. This works to reset the life calculation of the light-source lamp, allowing the used time of the new light-source lamp to be accumulated.

#### Projector's button

[MAIN POWER switch]



[Control panel]



#### 1 Turn on the MAIN POWER switch to go into stand-by mode.

- ON [ J: The main power turns ON and the STAND BY indicator lights.

#### 2 Press and hold down the "VIDEO", "SETTING", and "QUICK ALIGN." + "▲" at the same time for six seconds or more.

- The STAND BY and OPERATE indicators come on at the same time.

#### 3 While the STAND BY and OPERATE indicators are on, press the "VIDEO", "SETTING", and "COMPUTER" buttons at the same time.

- The STAND BY and OPERATE indicators blink two seconds alternately, and after blinking, the projector returns to stand-by state (the STAND BY indicator lights).

- This completes the resetting of the lamp use time.

#### Notes

To check the lamp use time has been reset :  
You can check it by LAMP TIME on the OPTIONS menu.

#### CAUTIONS

- After replacing with a new light-source lamp, be sure to reset the lamp use time. When the lamp use time indicates 1000 hours, and if it is not reset, the projector does not operate. (The light-source lamp does not turn on.)
- Reset the lamp use time only when you have replaced with a new light-source lamp. Never reset it at a halfway time. Otherwise, the replacement time may become unclear, degrade performance markedly, or cause lamp explosion.

## Cleaning and Replacing the Filter

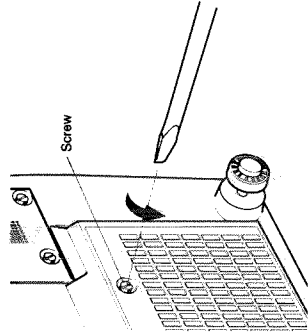
Clean the filter periodically. If the filter is heavily stained and does not get clean, or if it is damaged, replace the filter with a new filter (part No.: LC30209). Otherwise, dirt may get inside and appear on the screen, possibly preventing you from enjoying the video image fully. If dirt gets inside or if you need information about the filter, consult a JVC-authorized dealer where you have purchased the projector or nearest JVC Service center.

#### 1 Turn off the MAIN POWER switch.

After the projector goes into stand-by state with the STAND BY indicator on, turn off the main power switch and pull out the power cord from the projector and the wall outlet.

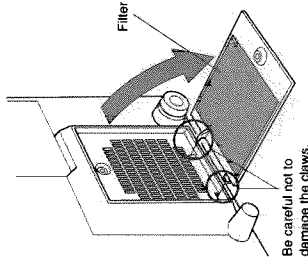
#### 2 Remove the filter.

Loosen the screw with a flat-end screwdriver.



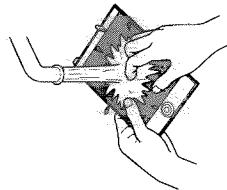
#### Notes

- The screws are fitted so that they do not come off the filter.
- If the filter is clogged with dirt, etc., the projector goes into an emergency mode (the EMERGENCY indicator blinks). So, clean the filter periodically. For the emergency mode, refer to pages 9 and 25.



#### 3 Clean the filter.

Clean the filter with a neutral detergent, wash it in water, and then dry it in the shade.



#### CAUTIONS

- Put on rubber gloves when using neutral detergent.
- After you have washed the filter in water, make sure the filter is completely dry before reinstalling it. Otherwise, electric shock or malfunction could occur.
- Do not clean the filter using a vacuum cleaner. Since the filter is soft, it may be sucked into the vacuum cleaner or damaged.

#### 4 Reinstall the filter.

Fasten the screw with a flat-end screwdriver.

#### Notes

- Install the filter correctly. Otherwise, the projector does not operate. (Goes into an emergency mode.)
- If the filter's claws are damaged, the projector may not operate. Then, replace with a new filter.

# Troubleshooting

Solutions to common problems related to your projector are described here. If none of the solutions presented here solves the problem, unplug the projector and consult a JVC-authorized dealer or service center.

Symptom	Probable cause	Corrective action	Page
<b>Power is not supplied.</b>	• Is the power cord disconnected?	• Insert the power cord (plug) firmly.	24
	• Is the main power switch turned on?	• Turn on the MAIN POWER switch.	26
	• Is the lamp-replacement opening cover closed correctly?	• Turn off the MAIN POWER switch, close the lamp-replacement opening cover, and turn on the main power switch again.	26, 48
	• Is the air filter closed correctly?	• Turn off the MAIN POWER switch, fit the air filter correctly, and turn on the main power switch again.	26, 51
	• Has the lamp life expired? (Has the lamp use time reached 1000 hours?)	• Turn off the MAIN POWER switch, replace with a new light-source lamp, and turn on the MAIN POWER switch. Reset the lamp use time after replacing with a new lamp.	26, 48, 50
<b>Light is not emitted, or light level is low.</b>	• Is the lens cap removed?	• Remove the lens cap.	24
	• Is the lamp life near its end?	• Check the lamp use time on the menu, and if the lamp life is near its end, arrange for a replacement lamp, or replace a little earlier.	43
<b>With power on, operation starts but stops in a few minutes. Video image does not appear, or audio sound does not occur.</b>	• Is the air intake or exhaust area blocked?	• Turn off the MAIN POWER switch, remove any blocking objects, and turn on the MAIN POWER switch again.	6, 8, 15, 26
	• Is the correct input selected?	• Select the correct inputs with the VIDEO and COMPUTER buttons.	27
	• Are connected devices connected correctly?	• Connect connected devices correctly.	19
<b>Video image dms.</b>	• Are signals being supplied from the connected devices?	• Set connected devices correctly.	—
	• Are input signals (scanning frequency, etc.) appropriate?	• Check if the signal is correct as input (scanning frequency, etc.). Input the appropriate signal.	19
	• Is the source setting correctly selected? Isn't a wrong source (forced mode) selected?	• Set the source setting to AUTO or to the correct dedicated source (forced mode).	46, 47
	• Is brightness adjusted correctly?	• Adjust brightness on the menu.	39
	• Is volume set at minimum?	• Adjust volume with the remote control's VOL. (+/-) buttons.	28
	• Aren't video and audio turned off by pressing the remote control's AV MUTING button?	• Press the remote control's AV MUTING button to turn video and audio on.	29
	• Is focus adjusted correctly?	• Adjust focus with the remote control's FOCUS (+/-) buttons.	28, 31
	• Is distance too short or too long?	• Set the projector at the correct distance.	16, 17
<b>Colour is poor or unstable.</b>	• Are TRACKING and PHASE adjusted correctly?	• Adjust TRACKING and PHASE on the menu.	31, 37
	• Is picture quality (colour density, etc.) adjusted correctly?	• Adjust picture quality on the menu.	39
	• Is the correct broadcast system (colour system) selected?	• Set the broadcast system (colour system) to AUTO.	35
	• Are signals (scanning frequency, etc.) to connected devices appropriate?	• Check if the signal is appropriate (scanning frequency, etc.), and input the appropriate signal.	19
	• Is the source setting correctly selected? Isn't a wrong source (forced mode) selected?	• Set the source setting to AUTO. If the problem still persists, set it to the correct dedicated source (forced mode).	46

Symptom	Probable cause	Corrective action	Page
<b>The upper part of the video image bows or distorts.</b>	• While computer system signal is input, isn't a sync signal for composite sync (Cs) or G on sync being input?	• Input separate sync signals for vertical sync (V) and horizontal sync (H) signals.	12
	• Isn't signal with much jitter or skew distortion being input to a video deck?	• Input signals with little jitter or distortion.	—
	• Is the source setting correctly selected? Isn't a wrong source (forced mode) selected?	• Set the source setting to AUTO. If the problem still persists, set it to the correct dedicated source (forced mode).	46
<b>Video image and audio sound suddenly go out.</b>	• Are video picture and audio turned off by pressing the AV MUTING button on the remote control unit?	• Turn on video picture and audio by pressing the remote control's AV MUTING.	29
<b>Remote control unit does not work.</b>	• Are batteries installed correctly?	• Match the polarities of batteries correctly (+ to + and - to -).	14
	• Are batteries exhausted?	• Replace with new batteries.	14
	• Is there a shielding object between the remote control unit and the remote sensor?	• Remove any shielding objects.	18
	• Is the distance too long?	• Use the remote control unit at a nearer point.	18

\* This projector is equipped with a microcomputer that may operate abnormally due to interference from external components. If this happens, turn off the main power and disconnect the power cord from the wall AC outlet. Then reconnect the power cord to AC outlet and turn on the main power again.  
(For the turning on and off the power, see pages 25 to 26.)

## Maintenance

- **Stains on the cabinet**  
Should be wiped off with a soft cloth. If the cabinet is heavily stained, wipe it with a cloth soaked in water-diluted neutral detergent and wring well, then wipe clean with a dry cloth.  
• **Since the cabinet may deteriorate in quality, become damaged or get its paint peeled off, be careful about the following:**
  - Do not wipe it with a hard cloth.
  - Do not wipe it strong.
  - Do not wipe it with thinner or benzene.
  - Do not apply any volatile substance such as insecticides to it.
  - Do not allow any rubber or vinyl article to remain in contact with it for a long time.
- **Stains on the lens**  
Should be cleaned off with commercially available blowers or lens cleaning paper (for cleaning glasses and cameras). Do not use liquid cleaning agents. This could cause the surface coating to be removed.  
Do not rub or hit the lens as its surface is prone to damage.

Specifications

Optical mechanism system	
• Projection method	3D-ILA device, 1 lens, 3 primary colour optical shutter method
• D-ILA device	0.9" (2.3cm) measured diagonally (1365×1024 pixels) × 3 (Total number of pixels : 4,193,280)
• Projecting lens	Electric-driven zoom of 1.5 x
• Screen size	Approx. 107cm to 762 cm [recommended] to 1,323cm [maximum] measured diagonally (*with aspect ratio : 4 : 3)
• Light-source lamp	400 W xenon lamp

Electrical system	
• Colour system	NTSC, NTSC4.43, PAL, SECAM (* Automatic switching / manual switching)
• Resolution	1365 × 1024 dots (*S-XGA full resolution, during RGB input)
• Scanning frequency	1000TV lines (*Horizontal resolution, aspect ratio 4 : 3, during video input) Horizontal frequency : 15 kHz ~ 82 kHz Vertical frequency : 50 Hz ~ 78 Hz

Input / output	
[AV IN (AV IN Input)]	
• Y/C	1-line, mini-DIN 4 pin × 1 Y (luminance signal) : 1Vp-p, 75Ω (negative sync) C (chroma signal) : 0.286Vp-p (burst signal), 75Ω [NTSC] : 0.3Vp-p (burst signal), 75Ω [PAL]
• VIDEO	1-line, BNC × 1 Composite video signal : 1Vp-p, 75Ω (negative sync)
• Y, Pb/B-Y, Pr/R-Y	1-line, BNC × 1 Component (Y/B-Y/R-Y) signals Y : 1Vp-p, 75Ω (negative sync) B-Y : 0.7Vp-p, 75Ω R-Y : 0.7Vp-p, 75Ω High-vision base band (Y/Pa/Ps) signals Y : 1Vp-p, 75Ω (3-value sync) Pa : ± 0.35Vp-p, 75Ω Ps : ± 0.35Vp-p, 75Ω
• AUDIO L/R (for AV IN)	1-line, RCA × 2 Audio signal : 0.5Vrms, high impedance

[COMPUTER IN (COMPUTER Input)]	
• COMPUTER IN-1 (PC)	1-line, D-sub 3-row 15 pin × 1 Analog RGB signal R : 0.7Vp-p, 75Ω B : 0.7Vp-p, 75Ω G : 0.7Vp-p, 75Ω G on Sync : 1Vp-p, 75Ω (negative sync) Sync signal : 3 to 5Vp-p, high impedance (positive/negative polarity) * Some connected devices may not correspond to composite sync (Cs) or G on sync signal.
• AUDIO	1-line, stereo mini-jack × 1 0.5Vrms, high impedance
(For COMPUTER IN-1)	
• COMPUTER IN-2	1-line, BNC × 5 Analog RGB signal R : 0.7Vp-p, 75Ω B : 0.7Vp-p, 75Ω G : 0.7Vp-p, 75Ω G on sync : 1Vp-p, 75Ω (negative sync)

Specifications (Cont.)

Horizontal sync/composite sync signal (H/Cs)	
H	: 3 to 5Vp-p, high impedance (positive/negative polarity)
Cs	: 3 to 5Vp-p, high impedance (positive/negative polarity)
Vertical sync signal (V)	
V	: 3 to 5Vp-p, high impedance (positive/negative polarity)
* Some connected devices may not correspond to composite sync (Cs) or G on sync signal.	
• AUDIO	1-line, stereo mini-jack × 1 (For COMPUTER IN-2) 0.5Vrms, high impedance

[COMPUTER OUT (COMPUTER OUTPUT)]	
• COMPUTER OUT	1-line, D-sub 3-row 15-pin × 1 Analog RGB signal R : 0.7Vp-p, 75Ω B : 0.7Vp-p, 75Ω G : 0.7Vp-p, 75Ω G on sync : 1Vp-p, 75Ω (negative sync) Horizontal sync/composite sync signal (H/Cs) H : TTL level (Polarity : Same for input) Cs : TTL level (Polarity : Same for input) Vertical sync signal (V) V : TTL level (Polarity : Same for input)

• AUDIO OUT	1-line, stereo mini-jack × 1 0 to 0.5Vrms (variable output)
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[CONTROL]	
• RS-232C	: 1-line, D-sub 9-pin × 1 * RS-232C-interface specified control terminal for controlling this projector with a personal computer.

• REMOTE	: 1-line, mini-jack × 1 * Remote terminal for connecting an infrared remote sensor extension unit, etc.
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[Other]	
• Audio power output (effective)	1 W + 1 W
• Built-in speaker	6 × 3 cm oval type × 2, impedance 8 Ω

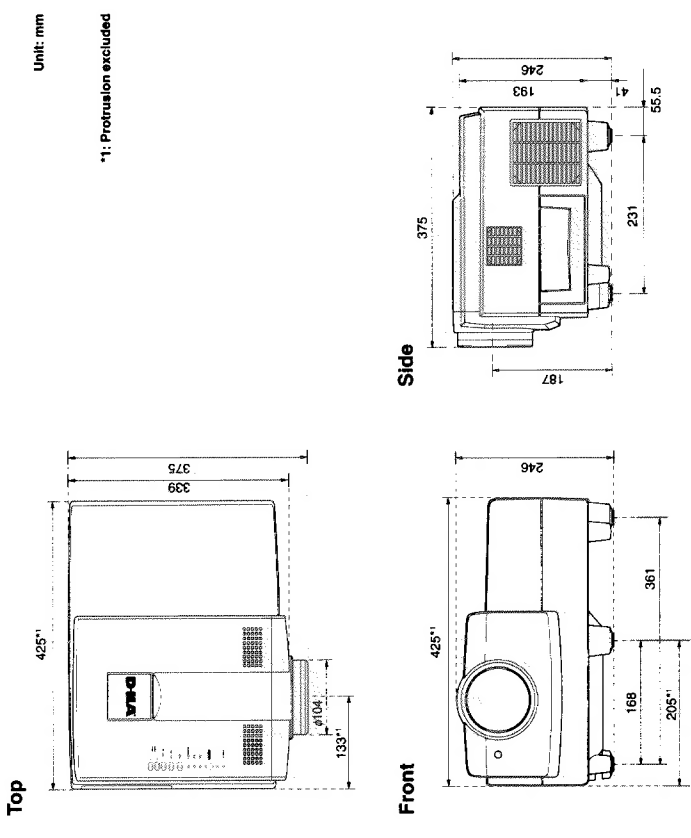
General	
• Power requirements	200 ~ 240V AC, 50/60 Hz
• Power consumption	4 A (200VAC) [7 W during stand-by]
• Allowable operation temperature	+ 5°C to + 35°C
• Allowable relative humidity	20% to 80% (no condensation)
• Allowable storage temperature	- 10°C to + 60°C
• Maximum outside dimensions (excluding protruding parts)	Approx. (W)425 × (H)246 × (D)375 mm
• Weight	Approx. 14.8kg
• Accessories	(Refer to page 5.)

\* Design and specifications are subject to change without notice.  
\* D-ILA devices are manufactured with a very high-precision technology, allowing 99.99% of the pixels to be effective. Only 0.01% or less of the pixels are missing or always on.  
\* For easy understanding, pictures and illustrations are shown by being emphasized, omitted or composed, and may be more or less different from actual products.  
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Specifications (Cont.)

Outside dimensions



Specifications (Cont.)

Pin assignment (Specifications for terminals)

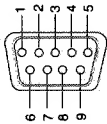
Y/C terminal

Pin number	Signal name
1	GND (Y)
2	GND (C)
3	Y
4	C



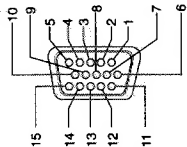
RS-232C terminal

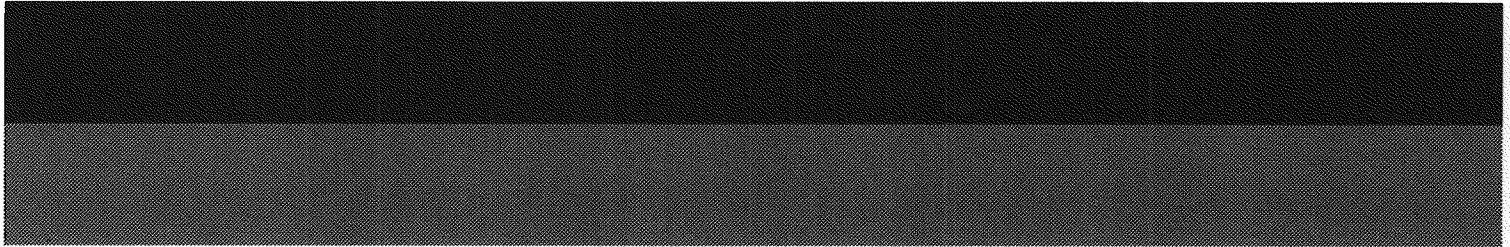
Pin number	Signal name	Pin number	Signal name
1	N/C	6	N/C
2	RD	7	N/C
3	TD	8	N/C
4	N/C	9	N/C
5	GND		



COMPUTER IN-1 (PC) / COMPUTER OUT Terminal

Pin number	Signal name	Pin number	Signal name
1	Red	9	N/C
2	Green	10	GND (SYNC)
3	Blue	11	GND
4	N/C	12	N/C
5	N/C	13	H SYNC
6	GND (Red)	14	V SYNC
7	GND (Green)	15	N/C
8	GND (Blue)		





**JVC**

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